

The beautiful is as useful as the useful.—Victor Hugo.

BIRDS AND NATURE

CONTENTS

THE SNOW STORM (Ralph Waldo Emerson) [Poem]	1
THE ASH-THROATED FLYCATCHER [Illustration]	2
WHAT THE CHILDREN FOUND OUT ABOUT DUCKS (Mrs. Rhodes Campbell)	5
NATURE'S ORCHESTRA (Robert Kerr Colville) [Poem]	6
THAT WINTER MORNING (L. O. Mosher)	7
A NESTING INCIDENT (Norman O. Foerster)	8
THE GOLDEN EAGLE [Illustration]	11
REST YE HEAR (Frank Farrington) [Poem]	13
THE LAPLAND LONGSPUR [Illustration]	14
THE CATTLE SPIDER (Andrew James Miller)	17
AN ABANDONED FARM HOUSE AND WHAT WE MADE OF IT (Ellen Robertson Miller)	18
THE HORNED TOAD (Henrietta Lee Coulling)	20
THE FORSTER'S TERN [Illustration]	22
BIRDS OF ONE YEAR (Lucie A. Peabody)	24
THE HABITS OF THE AMERICAN GOLDFINCH (Gerard Alan Abbott) [Illustration]	26
SOME CURIOUS BIRDS (Belle Paxson Drury)	29
THE MONTANA GRAYLING (Seth Mindwell) [Illustration]	35
A NATURALIST'S CALENDAR (Henry Johnstone) [Poem]	36
BIRD SYMPATHY (Thomas Hays Uzzell)	37
THE WATERMELON (Charles S. Raddin) [Illustration]	38
THE STRANGE STORY OF MISS CECROPIA (Ruth Marshall)	41
THE SULPHURY POLYPORUS [Illustration]	47
A GLASS ROAD (Louise Jamison)	48
THE FOG (Edgar Maclaren Swan) [Poem]	48

EDITED BY WILLIAM KERR HIGLEY

ILLUSTRATED BY COLOR PHOTOGRAPHY

Division of Birds

\$1.50 a Year. 15 Cts. a Copy.

A. W. MUMFORD, Publisher

378 Wabash Ave., Chicago, Ill.

BIRDS AND NATURE

MONTHLY, EXCEPT JULY AND AUGUST.

TERMS AND CONDITIONS OF PUBLICATION:

PRICE. Subscription price is one dollar and fifty cents a year, payable in advance, with 60 assorted pictures, \$2.00; single copy, 15 cents.

POSTAGE IS PREPAID by the publisher for all subscriptions in the United States, Guam, Porto Rico, Tutuila (Samoa), Canada and Mexico. For all other countries in the Postal Union add 30 cts. postage.

CHANGE OF ADDRESS. When a change of address is ordered, both the new and the old address must be given. Postmasters are not allowed to forward second class matter until postage is sent to prepay charges. It costs two cents per copy to forward this magazine. Subscribers who do not observe this rule should not ask us to send duplicate copies.

DISCONTINUANCES. If a subscriber wishes his magazine discontinued at the expiration of his subscription, notice to that effect should be sent, otherwise it is assumed that a continuance of the subscription is desired.

HOW TO REMIT. Remittances should be sent by check, draft, express order, or money order, payable to order of A. W. Mumford. Cash should be sent in registered letter.

AGENTS. We want an energetic, courteous agent in every town and county. Write for terms and territory.

RECEIPTS. Remittances are acknowledged by change of label on wrapper, indicating date to which subscription is paid.

MAGAZINES, back numbers, from 1897, 15 cents a copy, \$1.50 a year; the 74 back numbers, \$8.40.

BOUND VOLUMES, I to XIV each 8vo, 244 pages, from 40 to 60 colored pictures, 8x10 in., cloth, \$1.50. Double volumes, half morocco, \$3.00. Fourteen single volumes, cloth, \$14.00. Seven double volumes, half morocco, \$14.00.

Exchange price for bound volumes when magazines are returned: Single volumes, cloth, 75 cents. Combined volumes, half morocco, \$1.50.

COLORS PICTURES, assorted as desired, 2 cents each; to subscribers only 1 cent each, if ordered with subscription. The 616 pictures, \$6.16.

PREMIUMS. Either of the following colored pictures sent free with subscriptions: (1) Song of the Lark, 18x21, or (2) Gladstone, 18x24, or (3) The Golden Pheasant, 18x24, or (4) Twelve Industrial Pictures, 12x18, or (5) ten colored pictures from Birds and Nature.

OTHER PUBLICATIONS.

Little Folks.....	\$1.00
School Bulletin (Monthly).....	1.00
American Primary Teacher (Monthly).....	1.00
N. E. Journal of Education (Weekly).....	2.50
Educational Review (Monthly).....	3.00

10 per cent discount on any or all of these when ordered in combination with Birds and Nature. Sent to one or several addresses.

All letters should be addressed to A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago

\$4.20 FOR \$2.10

Another Combination Offer that Means Something.

BIRDS AND NATURE one year\$1.50

*Last Ten Back Numbers BIRDS AND NATURE..... 1.50

60 Colored Pictures from BIRDS AND NATURE..... 1.20

The total amount of value.....\$4.20

ALL FOR
\$2.10

BIRDS AND NATURE, Monthly; 48 pages, 8x10 inches; per year, \$1.50. A magazine devoted to nature, and illustrated by color photography. It is the only periodical in the world that publishes pictures of birds, animals, insects, flowers, plants, etc., in natural colors. Eight full-page plates each month.

"It is one of the most beautiful and interesting publications yet attempted in this direction. It has other attractions in addition to its beauty, and must win its way to popular favor. I wish the handsome little magazine abundant prosperity."—*Chas. R. Shinner, State Supt., Albany, N. Y.*

"You have certainly hit upon a method of reproducing natural colors with remarkable fidelity to nature."—*Dr. Elliott Coues.*

"Your magazine has certainly had a phenomenal success, and it is entirely worthy of its cordial reception."—*J. A. Allen, Editor "The Auk."*

"Most of the pictures are astonishingly good. I like them so well that I shall put them up on the walls of my rustic retreat, 'Slab Sides.'"—*John Burroughs.*

"When one considers the low price at which you sell BIRDS, the number and excellence of the plates are surprising, and I trust that your efforts to popularize the study of ornithology may meet with the success it so well deserves."—*F. M. Chapman, Associate Editor "The Auk."*

*A bound volume of BIRDS AND NATURE may be substituted for the ten back numbers.

A sample of this magazine for a dime and two pennies—12 cents
in stamps. Send for catalogue.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, CHICAGO

\$4.20 FOR \$2.10

ANOTHER COMBINATION OFFER THAT MEANS SOMETHING

Please find enclosed money order for \$2.10, for which please send me your combination offer as advertised in BIRDS AND NATURE, \$4.20 for \$2.10.

December 11, 1903.

FREDERICK JAEKEL.

Please send to my address publications as mentioned in your special offer of \$4.20 for \$2.10, given in BIRDS AND NATURE, for which I enclose required amount.

Altadena, Calif., December 8, 1903.

MRS. W. A. SCRIPPS.

I enclose money order, \$2.10, for your combination offer, as advertised in BIRDS AND NATURE.

Bayonno, N. J., December 11, 1903.

HANNAH J. SHAFER.

Enclosed find \$2.10, for which please send me, as per your offer, \$4.20 for \$2.10.

New Berlin, Ohio, December 2, 1903.

H. J. ROHRBAUGH.

Enclosed find postal money order for your special combination offer of \$2.10.

Youngstown, Ohio, December 3, 1903.

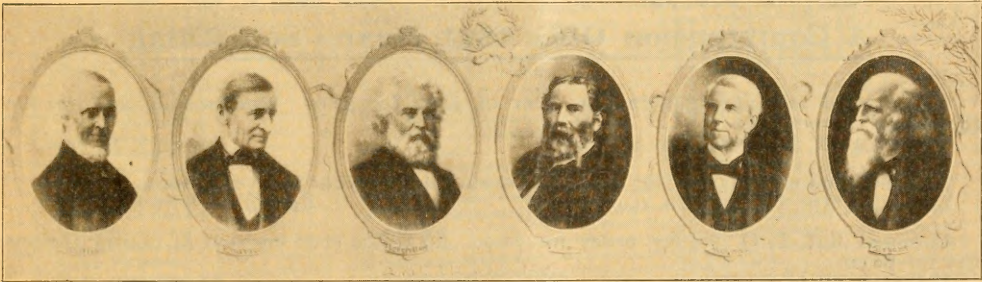
JOSEPH BUTLER.

I wish to take advantage of your special offer, \$2.10, for which find amount enclosed.

South London, Ont., December 1, 1903.

HELEN WELD.

Eminent Poets in Photogravure



These are lifelike pictures of our eminent poets. They are printed on heavy paper and are ready for framing. Each photogravure is 4x5½ inches, and the sheet is 8x29 inches.

This picture should be in every school and home, as all should be familiar with the faces of our own poets. Whittier, Emerson, Longfellow, Lowell, Holmes and Bryant are truthfully portrayed in these pictures.

Price, - - - - 25 Cents

We also have a sheet of six photogravures of American Authors: George Bancroft, J. Fenimore Cooper, Nathaniel Hawthorne, Benjamin Franklin, Washington Irving, Bayard Taylor. A sheet of six photogravures of British Poets: Alfred Tennyson, Lord Byron, Robert Burns, John Milton, Alexander Pope, William Shakespeare. A sheet of six photogravures of the following musicians: Mozart, Beethoven, Liszt, Gounod, Chopin and Wagner on the same paper and of the same size. Price, 25 cents each.

Any two of these series sent free to any present subscriber who sends us one new subscription to CHILD GARDEN enclosing \$1.00.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago

\$4.10 FOR \$2.00

A Combination Offer That Means Something.

BIRDS AND NATURE (one year).....	\$1.50
BIRDS OF SONG AND STORY (Grinnell)	1.00
GAME OF BIRDS.....	.35
GOLDEN PHEASANT (Colored Picture).....	.25
LITERATURE GAME.....	.25
GAME OF INDUSTRIES.....	.25
TWENTY-FIVE PICTURES (From Birds and Nature)	.50

ALL FOR ONLY

\$2.00

The total amount of value.....\$4.10

BIRDS AND NATURE——Monthly: 48 pages, 8x10 inches; per year, \$1.50. A magazine devoted to nature, and illustrated by color photography. It is the only periodical in the world which publishes pictures of birds, animals, insects, flowers, plants, etc., in natural colors. Eight full page plates each month.
"Certainly no periodical, and probably no book, on birds ever found anything like such favor with the public as BIRDS AND NATURE."—*Evening Post, New York*

BIRDS OF SONG AND STORY——A bird book for Audubon societies, 16 color plates.

GAME OF BIRDS——Illustrations of popular birds, in colors true to nature, on 52 finely enameled cards 2½x3½ inches. Enclosed in case with full directions for playing. A beautiful and fascinating game.

GOLDEN PHEASANT——A beautiful Picture for framing. Printed in natural colors on fine paper 18x24 inches.

LITERATURE GAME——500 Questions and Answers in English Literature. 100 cards, 2¼x3 inches. Interesting and instructive.

GAME OF INDUSTRIES——Educational—400 Questions and Answers on the great industries of our country. 100 cards, 2¼x3 inches.

REMEMBER——A year's subscription to BIRDS AND NATURE and "Birds of Song and Story" alone amount to \$2.50. If you now take BIRDS AND NATURE your subscription will be advanced one year.

A sample of Birds and Nature for a dime and two pennies—12 cents in stamps. Send for Catalogue.

A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago.

\$4.10 FOR \$2.00

A Combination Offer that Means Something

Please send me your combination offer of \$4.10 for \$2.00. Find money order for the required \$2.00 enclosed.

Plymouth, N. H., November 30, 1903.

ETHEL J. FLYNN

Enclosed find money order for \$2.00, for which send me your \$4.10 offer for \$2.00.

St. Louis, Mo., December 8, 1903.

EDWIN C. KNICKMEYER.

Enclosed find P. O. money order for \$2.00, for which send me your \$4.10 combination offer for \$2.00.

Wheaton, Ill., December 10, 1903.

ELIZABETH OTT.

Enclosed find \$2.00, for which please send me your combination offer advertised in November BIRDS AND NATURE.

Trenton, N. J., December 6, 1903.

E. A. CRAMMER.

Having been a subscriber to your valuable magazine for past years, now wish to take advantage of your \$4.10 combination offer for \$2.00, and enclose postal order for that amount.

Snohomish, Wash., December 11, 1903.

C. C. LAUGHLIN.

Enclosed find check for \$2.00 for the combination offer contained in BIRDS AND NATURE headed "\$4.10 for \$2.00."

Carlisle, Pa., December 9, 1903.

ELLA G. HILL.

Enclosed find herewith P. O. order, \$2.00, for which kindly send combination offer of \$4.10 and oblige.

Argo, Colo., December 5, 1903.

C. A. MONTROSE.

Enclosed find money order for \$2.00 for which please send me your combination offer for \$4.10 for \$2.00.

Walla Walla, Wash., December 20, 1903.

CHAS. B. LAMBERT.

ORDER BLANK.

BIRDS AND NATURE PICTURES

In Natural Colors. Size, 7x9 inches.

PRICE. Assorted as desired, two cents each; one cent each if one or more subscribers to BIRDS AND NATURE are sent at the same time.

SPECIAL OFFERS. (1) 50 plates and BIRDS AND NATURE, one year, \$2.00.
(2) The complete set, 632 plates, 1 cent each, \$6.32. Send for catalogue for further information. Mark pictures desired and return this sheet. A. W. MUMFORD, 378 Wabash Ave., Chicago.

Date.....

I enclose.....for which please send the following order to

Name,.....

Street,.....

P. O.

State,.....

- | | | |
|----------------------------------|----------------------------------|--------------------------------|
| 1 Nonparell. | 52 American Mockingbird. | 102 White-fronted Goose. |
| 2 Resplendent Trogon. | 53 Black-crowned Night Heron. | 103 Turnstone. |
| 3 Mandarin Duck. | 54 Ring-billed Gull. | 104 Belted Piping Plover. |
| 4 Golden Pheasant. | 55 Logger-head Shrike. | 105 Wild Turkey. |
| 5 Australian Parrakeet. | 56 Baltimore Oriole. | 106 Cerulean Warbler. |
| 6 Cock of the Rock. | 57 Snowy Owl. | 107 Yellow-billed Tropic Bird. |
| 7 Red Bird of Paradise. | 58 Scarlet Tanager. | 108 European Kingfisher. |
| 8 Yellow-throated Toucan. | 59 Ruffed Grouse. | 109 Vermilion Flycatcher. |
| 9 Red-rumped Tanager. | 60 Black and White Creeping | 110 Lazuli Bunting. |
| 10 Golden Oriole. | Warbler. | 111 Mountain Bluebird. |
| 11 American Blue Jay. | 61 American Bald Eagle. | 112 English Sparrow. |
| 12 Swallow-tailed Indian Roller. | 62 Ring Plover. | 113 Allen's Hummingbird. |
| 13 Red-headed Woodpecker. | 63 Mallard Duck. | 114 Green-winged Teal. |
| 14 Mexican Mot Mot. | 64 American Avocet. | 115 Black Grouse. |
| 15 King Parrot. | 65 Canvas-back Duck. | 116 Flamingo. |
| 16 American Robin. | 66 Wood Duck. | 117 Verdin. |
| 17 American Kingfisher. | 67 Anhinga, or Snake Bird. | 118 Bronzed Grackle. |
| 18 Blue-mountain Lory. | 68 American Woodcock. | 119 Ring-necked Pheasant. |
| 19 Red-winged Blackbird. | 69 White-winged Scoter. | 120 Yellow-breasted Chat. |
| 20 Cardinal, or Red Bird. | 70 Snowy Heron, or Little Egret. | 121 Crowned Pigeon. |
| 21 Bluebird. | 71 Osprey. | 122 Red-eyed Vireo. |
| 22 Barn Swallow. | 72 Sora Rail. | 123 Fox Sparrow. |
| 23 Brown Thrasher. | 73 Kentucky Warbler. | 124 Bob-white. |
| 24 Japan Pheasant. | 74 Red-breasted Merganser. | 125 Passenger Pigeon. |
| 25 Bobolink. | 75 Yellow Legs. | 126 Short-eared Owl. |
| 26 American Crow. | 76 Skylark. | 127 Rose Cockatoo. |
| 27 Flicker. | 77 Wilson's Phalarope. | 128 Mountain Partridge. |
| 28 Black Tern. | 78 Evening Grosbeak. | 129 Least Bittern. |
| 29 Meadow Lark. | 79 Turkey Vulture. | 130 Bald Pate Duck. |
| 30 Great Horned Owl. | 80 Gambel's Partridge. | 131 Purple Finch. |
| 31 Rose-breasted Grosbeak. | 81 Summer Yellow Bird. | 132 Red-bellied Woodpecker. |
| 32 Canada Jay. | 82 Hermit Thrush. | 133 Sawwhet Owl. |
| 33 Purple Gallinule. | 83 Song Sparrow. | 134 Black Swan. |
| 34 Smith's Longspur. | 84 Yellow-billed Cuckoo. | 135 Snowy Plover. |
| 35 American Red Crossbills | 85 Ruby-throated Hummingbird. | 136 Lesser Prairie Hen |
| 36 California Woodpecker. | 86 House Wren. | 137 Black Duck. |
| 37 Pied-billed Grebe. | 87 Phoebe. | 138 Wilson's Petrel. |
| 38 Bohemian Waxwing. | 88 Ruby-crowned Kinglet. | 139 Blue-Gray Gnatcatcher. |
| 39 Long-billed Marsh Wren. | 89 Mourning Dove. | 140 American Coot. |
| 40 Arizona Jay. | 90 White-breasted Nuthatch. | 141 Ivory-billed Woodpecker. |
| 41 Screech Owl. | 91 Blackburnian Warbler. | 142 American Sparrow Hawk. |
| 42 Orchard Oriole. | 92 Gold Finch. | 143 Silver Pheasant. |
| 43 Marsh Hawk. | 93 Chimney Swift. | 144 Scaled Partridge. |
| 44 Scissor-tailed Flycatcher. | 94 Horned Lark. | 145 Ovenbird. |
| 45 Black-capped Chickadee | 95 Yellow-bellied Sapsucker. | 146 American Three-toed Wood- |
| 46 Prothonotary Warbler. | 96 Warbling Vireo. | pecker. |
| 47 Indigo Bird. | 97 Wood Pewee. | 147 Bartramian Sandpiper. |
| 48 Night Hawk. | 98 Snow Bunting. | 148 Nightingale. |
| 49 Wood Thrush. | 99 Junco. | 149 Roseate Spoonbill. |
| 50 Catbird. | 100 Kingbird. | 150 Dickcissel. |
| 51 Yellow-throated Vireo. | 101 Summer Tanager. | |

151 Dusky Grouse.
 152 Eggs, First Series.
 153 South American Rhea.
 154 Bay-breasted Warbler.
 155 Black-necked Stilt.
 156 Pintail Duck.
 157 Double Yellow-headed Parrot.
 158 Magnolia Warbler.
 159 Great Blue Heron.
 160 Eggs, Second Series.
 161 Brunnich's Murre.
 162 Canada Goose.
 163 Brown Creeper.
 164 Downy Woodpecker.
 165 Old Squaw Duck.
 166 White-faced Glossy Ibis.
 167 Arkansas Kingbird.
 168 Eggs, Third Series.
 169 Wilson's Snipe.
 170 Black Wolf.
 171 Red Squirrel.
 172 Prairie Hen.
 173 Butterflies, First Series.
 174 Gray Rabbit.
 175 American Ocelot.
 176 Apple Blossoms.
 177 Wilson's Tern.
 178 Coyote.
 179 Fox Squirrel.
 180 Loon.
 181 Butterflies, Second Series.
 182 American Red Fox.
 183 Least Sandpiper.
 184 Mountain Sheep.
 185 American Herring Gull.
 186 Raccoon.
 187 Pigmy Antelope.
 188 Red-shouldered Hawk.
 189 Butterflies, Third Series.
 190 American Gray Fox.
 191 Gray Squirrel.
 192 Pectoral Sandpiper.
 193 King Bird of Paradise.
 194 Peccary.
 195 Bottle-nosed Dolphin.
 196 Tufted Puffin.
 197 Butterflies, Fourth Series.
 198 Armadillo.
 199 Red-headed Duck.
 200 Golden Rod.
 201 Prairie Sharp-tailed Grouse.
 202 Brown and Red Bat.
 203 American Otter.
 204 American Golden Plover.
 205 Moths.
 206 Canadian Porcupine.
 207 Caspian Tern.
 208 Flowering Almond.
 209 African Lion.
 210 Cacti.
 211 Flying Squirrel.
 212 Hummingbirds.
 213 Silkworm.
 214 California Vulture.
 215 American Goldeneye.
 216 Skunk.
 217 Chimpanzee.
 218 Puma.
 219 Medicinal Plant: Lemon.
 220 American Mistletoe.
 221 Nuts.
 222 Whippoorwill.
 223 Snapping Turtle.
 224 Sandhill Crane.
 225 Medicinal Plant: Ginger.
 226 Crab-eating Opossum.
 227 Geographic Turtle.
 228 White Ibis.
 229 Iris.
 230 Duck-billed Platypus.
 231 Cape May Warbler.
 232 The Cocoanut.
 233 Tufted Titmouse.
 234 Northern Hare.
 235 Pineapple.
 236 Hooded Merganser.
 237 Medicinal Plant: Cloves.
 238 Common Ground Hog.
 239 Common Mole.
 240 Azalea.
 241 Medicinal Plant: Nutmeg.
 242 American Barn Owl.
 243 Kangaroo.
 244 Hoary Bat.
 245 Nashville Warbler.
 246 English Grapes.

247 Swift Fox.
 248 Hyacinth.
 249 Cedar Waxwing.
 250 Hyrax.
 251 Medicinal Plant: Coffee.
 252 Bonaparte's Gull.
 253 Common Baboon.
 254 Grinnell's Water Thrush.
 255 Hairy-tailed Mole.
 256 Cineraria.
 257 A Feather Changing from Green to Yellow.
 258 Western Yellow-throat.
 259 Myrtle Warbler.
 260 Blue-winged Yellow Warbler.
 261 Golden-winged Warbler.
 262 Mourning Warbler.
 263 Chestnut-sided Warbler.
 264 Black-throated Blue Warbler.
 265 Pointer Dog.
 266 Shells.
 267 Marbles.
 268 Ores.
 269 Minerals.
 270 Water Lilies.
 271 Yellow Perch.
 272 Beetles.
 273 Forests.
 274 Grand Canon.
 275 Terraced Rocks, Yellowstone Park.
 276 Rooster and Hen.
 277 Oil Well.
 278 Polished Woods.
 279 Brook Trout.
 280 Niagara Falls.
 281 Purple Ladies' Slipper.
 282 Medicinal Plant; Tea.
 283 Towhee.
 284 Canary.
 285 Carolina Paroquet.
 286 Chipmunk.
 287 Peach.
 288 Common Minerals and Valuable Ores.
 289 Narcissus.
 290 Medicinal Plant: Coca.
 291 Red-tailed Hawk.
 292 Maryland Yellow-throat.
 293 Lyre Bird.
 294 Cowbird.
 295 Wild Cat.
 296 European Squirrel.
 297 Virginia Rail.
 298 Blue-winged Teal.
 299 Yellow-headed Blackbird.
 300 Black Squirrel.
 301 Weasel (Ermine).
 302 Medicinal Plant; Quince.
 303 Quartz.
 304 Lily of the Valley.
 305 Killdeer.
 306 Cinnamon Teal.
 307 Clapper Rail.
 308 Gopher.
 309 Mink.
 310 Carbons.
 311 Medicinal Plant; Licorice.
 312 Yellow Ladies' Slipper and Painted Cup.
 313 Peacock.
 314 Willow Ptarmigan.
 315 Stellar's Jay.
 316 Ruddy Duck.
 317 Muskrat.
 318 Medicinal Plant; Poppy.
 319 Primrose.
 320 Copper and Lead Ores.
 321 American Bittern.
 322 Scarlet Ibis.
 323 Massena Partridge.
 324 Ring-billed Duck.
 325 Medicinal Plant; Thyme.
 326 Bloodroot.
 327 Western Blue Grosbeak.
 328 Shells.
 329 Magpie.
 330 Red-breasted Nut-hatch.
 331 Purple Martin.
 332 Ring-necked Dove.
 333 Opossum.
 334 Genista.
 335 Medicinal Plant; Digitalis.
 336 Raven.
 337 Wilson's Thrush.
 338 Red or Wood Lily.

339 Common Sunfish.
 340 A Mountain River.
 341 Insects.
 342 Brittany—(Cows).
 343 Harvesting in the Great Northwest.
 344 Homing Pigeon.
 345 Swamp Rose Mallow.
 346 Yellow Ladies' Slipper.
 347 } New England Aster.
 347 } Late Purple Aster.
 348 Wild Yellow or Canadian Lily.
 349 Vesper Sparrow.
 350 Calico Bass.
 351 Mountain Lake.
 352 Fruit: Banana.
 353 Oswego Tea or Bee Balm.
 354 } Fringed Gentian.
 354 } Closed or Blind Gentian.
 355 } Tall or Giant Sunflower.
 355 } Black-eyed Susan or Oxeye Daisy.
 356 Wild Columbine.
 357 American Redstart.
 358 Trout.
 359 Ocean Waves.
 360 Domestic Fowls.
 361 Western Willet.
 362 Buffle-Head.
 363 American Eared Grebe.
 364 Louisiana Tanager.
 365 Luna and Polyphemus Moths.
 366 Prong-horned Antelope.
 367 Sensitive Plant.
 368 Medicinal Plant; Almond.
 369 Western Horned Owl.
 370 Long-crested Jay.
 371 Fulvous Tree-duck.
 372 Red-breasted Sapsucker.
 373 Prometheus and Sceloporus Moths.
 374 Irish Setter.
 375 Pitcher Plant (Nepenthes).
 376 Medicinal Plant; Mandrake.
 377 White-winged Crossbill.
 378 Townsend's Warbler.
 379 Knot or Robin Snipe.
 380 Hawk Owl.
 381 Water Shells.
 382 Collared Lizard.
 383 Fruit: Apple.
 384 Medicinal Plant; Vanilla.
 385 American Rough-legged and Young Red-tailed Hawks.
 386 Short-billed Dowitcher.
 387 Great-tailed Grackle.
 388 Hooded Warbler.
 389 Land Shells.
 390 Gila Monster.
 391 Medicinal Plant; Cassia Cinnamon.
 392 Fruit: Pomegranate.
 393 Owl Parrot.
 394 Gray Parrot.
 395 White Pelican.
 396 Marbled Murrelet.
 397 Black Bear.
 398 Pond and River Shells.
 399 Fruit: Orange.
 400 Medicinal Plant; Pepper.
 401 Crested Curassow.
 402 Harlequin Duck.
 403 Canada Grouse.
 404 Dovekie.
 405 Beaver.
 406 Marine Shells.
 407 Fruit: Lemon.
 408 Medicinal Plant: Cubebs.
 409 Audubon's Oriole.
 410 Marbled Godwit.
 411 Rusty Blackbird or Grackle.
 412 Surf Scoter.
 413 American Elk.
 414 Nautilus Shells.
 415 Flowers: Mountain Laurel.
 415 } Trailing Arbutus.
 416 Medicinal Plant: Hops.
 417 Bullock's Oriole.
 418 Sanderling.
 419 Great Northern Shrike.
 420 Brandt's Cormorant.
 421 Buffalo.
 422 Agates.
 423 Flowers: Great Mullein.
 423 } Moth Mullein.
 424 Medicinal Plant: Cocoa Fruit.

- | | | |
|--|--|---|
| 425 Anna's Hummingbird. | 479 Sheep | 532 White-crowned Sparrow |
| 426 Rufous Hummingbird | 480 English Walnut | 533 Carnations |
| 427 White-throated Sparrow | 481 Black-chinned Hummingbird | 534 Kangaroo Mouse |
| 428 Parula Warbler | 482 Burrowing Owl | 535 Fruit: Persimmons |
| 429 Tourmaline | 483 Audubon's Warbler | 536 Medicinal Plant: Dandelion |
| 430 Indian Elephant | 484 Red-backed Sandpiper | 537 European Goldfinch. |
| 431 Walrus | 485 Garnet | 538 Eskimo Curlew. |
| 432 Bengal Tiger | 486 Black Cohosh and Arrow Head | 539 Savanna Sparrow. |
| 433 Yellow-bellied Flycatcher | 487 Cows | 540 Nuttall's Woodpecker. |
| 434 Olive-sided Flycatcher | 488 Sweet Flag | 541 Redhead's Nest. |
| 435 Tree Sparrow | 489 Green Heron | 542 Cynthia Moth. |
| 436 Black-throated Green Warbler | 490 Varied Thrush | 543 Jade, Precious Coral and Pearls. |
| 437 Beryl | 491 Short-billed Marsh Wren | 544 Roses. |
| 438 African Lion | 492 Prairie Warbler | 545 Pink-sided Junco. |
| 439 Alaskan Moose | 493 Birth Stones | 546 Shoveller. |
| 440 Polar Bear | 494 Horse | 547 Redpoll. |
| 441 Pine Grosbeak | 495 Robin's Plantain and Blue Vervain | 548 Ferruginous Rough-Legged Hawk. |
| 442 Field Sparrow | 496 Medicinal Plant: Cotton | 549 Shoveller's Nest. |
| 443 Carolina Wren | 497 Swallow tailed Kite | 550 Coral. |
| 444 Black-poll Warbler | 498 Alice's Thrush | 551 Muskallunge. |
| 445 Turquois | 499 Carolina Chickadee | 552 Strawberries. |
| 446 Striped Hyena | 500 Violet-green Swallow | |
| 447 Giraffe | 501 Starfish | 553 English Robin Redbreast |
| 448 Miriki Spider Monkey | 502 "Old Faithful" Geyser | 554 Gadwall |
| 449 White-eyed Vireo | 503 Sea or Marsh Pink and Fire-weed | 555 Harris's Sparrow |
| 450 Rivoli Hummingbird | 504 Medicinal Plant: Tobacco | 556 Little Blue Heron |
| 451 Worm-eating Warbler | 505 Palm Warbler. | 557 Gadwall's Nest |
| 452 Chipping Sparrow | 506 Long billed Curlew. | 558 Stony Corals |
| 453 Topaz | 507 Everglade Kite. | 559 Gem Minerals: Epidote, and Chrysolite |
| 454 Rhesus Monkey | 508 Grasshopper Sparrow. | 560 Fruit: Red Peppers |
| 455 Asiatic or Bactrian Camel | 509 Feldspar. | 561 Bewick's Wren |
| 456 Zebra | 510 Silver-spot Butterfly. | 562 Spotted Sandpiper |
| 457 Golden-crowned Kinglet | 511 Cowry Shells. | 563 Arctic Towhee |
| 458 King Rail | 512 Fruit: Cherries. | 564 Western Red-tail Hawk |
| 459 Brown-headed Nuthatch | 513 Philippine Yellow-breasted Sun-bird. | 565 Woodcock's Nest |
| 460 Sharp-shinned Hawk | 514 Great Gray Owl. | 566 Reef-Building Corals |
| 461 Quartz | 515 Green-crested Flycatcher. | 567 Easter Lily |
| 462 Greenland Whale | 516 Louisiana Water-thrush. | 568 Fruit: Corn |
| 463 Bur or Spear Thistle and Pasture or Fragrant Thistle | 517 Amber. | 569 Bush-Tit |
| 464 Irish Moss | 518 Leaf Butterfly. | 570 Black headed Grosbeak |
| 465 Blue-headed Vireo | 519 Snails of the Ocean. | 571 Olive-backed Thrush |
| 466 California Thrasher | 520 Fruit: Tomatoes. | 572 Impeyan Pheasant |
| 467 Broad-tailed Hummingbird | 521 Pileated Woodpecker | 573 Crow's Nest |
| 468 Broad-winged Hawk. | 522 Starling | 574 Hydroid Corals |
| | 523 Arkansas Goldfinch | 575 Abert's Squirrel |
| 469 Quartz | 524 Black-bellied Plover | 576 Flowers: Clematis |
| 470 Domestic Cat | 525 Diamond & Sapphire in Matrix. | 577 Swamp Sparrow |
| 471 Soapwort or Bouncing Bet and Snake-head or Turtle-head | 526 Horned Toads | 578 Florida Gallinule |
| 472 Sugar Cane | 527 Moth (Attacus atlas) | 579 European Song Thrush |
| 473 Winter Wren | 528 Fruit: Egg Plant | 580 Clarke's Nutcracker |
| 474 Leconte's Sparrow | 529 Hooded Oriole | 581 Florida Gallinule's Nest |
| 475 Northern Phalarope | 530 Chuck-will's-widow | 582 Milweed Butterfly |
| 476 Hairy Woodpecker | 531 Gray-crowned Leucosticte | 583 Ferret |
| 477 Opal | | 584 Flower: Calla Lily |
| 478 Purple Violet and Hepatica | | 585 Lark Sparrow |
| | 602 Double-breasted Cormorant | 618 Golden Eagle |
| 586 White-tailed Ptarmigan | 603 Traill's Flycatcher | 619 Lapland Longspur |
| 587 Black-billed Cuckoo | 604 American Dipper | 620 Forster's Tern |
| 588 Crested Titmouse (Europe) | 605 Nest of the Killdeer | 621 Nest of the American Goldfinch |
| 589 Nest of the Least Bittern | 606 Sea Urchins | 622 Grayling |
| 590 Minor Gems | 607 Black Bass | 623 Watermelons |
| 591 Mushroom: Green Russula | 608 Mushroom: Masked Tricoloma | 624 Mushroom: Sulphury Polyporus |
| 592 Mushroom: Fly Mushroom | 609 Tree Swallow | 625 House Finch |
| 593 Tennessee Warbler | 610 Road Runner | 626 Lesser Scaup Duck |
| 594 Black Brant | 611 Orange-crowned Warbler | 627 Kittiwake |
| 595 White-eyed Towhee | 612 Wheatear | 628 American Goshawk |
| 596 Green Woodpecker (Europe) | 613 Nest of Wilson's Phalarope | 629 Nest of the Lesser Scaup Duck |
| 597 Nest of the King Rail | 614 Garpike | 630 Cut-throat Trout |
| 598 Ornamental Stones | 615 Fruit: Pears | 631 Grape Fruit |
| 599 Grasshoppers (Mexico) | 616 Mushroom: Glistening Coprinus | 632 Mushroom: Polystictus |
| 600 Mushroom: Chantarelle | 617 Ash-throated Flycatcher | |
| 601 Pine Siskin | | |

A set including one of each of the above 632 pictures for \$6.32

Order some of these Pictures for Bird Day and Arbor Day.

A. W. MUMFORD, Publisher, 378 Wabash Ave., Chicago

TESTIMONIAL OF BIRDS AND NATURE PICTURES

632—1 CENT EACH

We have been supplying some of these pictures to the *Chicago Tribune* for supplements. On the editorial page of the *Tribune* Sunday issue, May 11, 1902, appeared a letter from one of the *Tribune's* subscribers, containing the following sentences:

"Today's Passenger Pigeon is something which rejoice the heart of every bird lover. In fidelity to life the picture cannot be surpassed."

SPECIAL PICTURES IN COLOR

Song of the Lark. Size, 18x21 inches. Price, 25 cents.

Gladstone. Size, 18x24 inches. Price, 25 cents.

Golden Pheasant. Size, 18x24 inches. Price, 25 cents.

INDUSTRIAL PICTURES

Size, 6x9 inches. At the bottom of each picture is printed a brief description

Lumbering set, 10 cents

Lumber Camp
Sawing Trees
Hauling Logs

Steam Log Loader
Railway Logging in a Forest
Before the Drive

A Log Jam
Log Thawing Pond
A Lumber Plant

A Typical Lumber Yard
Receiving Docks
Home Interior

PHOTOGRAVURES OF EMINENT AUTHORS AND MUSICIANS

Seven sheets, each containing six portraits

American Poets	American Poets	Amer. Authors	British Poets	British Authors	Great Preachers	Musicians
Whittier	Carleton	Bancroft	Tennyson	Dickens	Beecher	Mozart
Emerson	Poe	Cooper	Byron	Macaulay	Spurgeon	Beethoven
Longfellow	Riley	Hawthorne	Burns	Carlyle	Brooks	Liszt
Lowell	Field	Franklin	Milton	Ruskin	Hall	Gounod
Holmes	Whitman	Irving	Pope	Scott	Moody	Chopin
Bryant	Harte	Taylor	Shakespeare	Thackeray	Parker	Wagner

The sheets are 8x29 inches, ready for framing

Price, each sheet, 25 cents; any 5 for \$1.00

TYPICAL FOREST TREES IN PHOTOGRAVURE, 9x12

First Series	Second Series	Third Series
1 Black Oak	1 Red Oak	1 White Oak
2 White Pine	2 Silver Leaf Poplar	2 Black Walnut
3 American Elm	3 Hickory	3 Horse Chestnut
4 Lombardy Poplar	4 Hard Maple	4 Basswood or Linden
5 Tamarack	5 Fir Balsam	5 Black Ash
6 Soft Maple	6 White Ash	6 Butternut
7 Willow	7 White Cedar	7 Locust
8 White Birch	8 Beech	8 Bitternut Hickory

40 cents a series. The three series, \$1.00, postpaid

No teacher should be without a set of our Forest Trees. Sample sent on request.

'RIGINAL RINEHART REPRODUCTIONS

From colored photographs, showing in detail the fastastic coloring, gaudy clothing, head dresses and ornaments of the 'ollowing subjects:

1 Brushing Against (Apache)	16 High Bear (Sioux)	28 Chief White Man (Kiowa)
2 Chief Geronimo (Apache)	17 Chief Hollow Horn Bear (Sioux)	29 Chief White Swan (Crow)
3 Hattie Tom (Apache)	18 Chief Red Cloud (Sioux)	30 Yellow Feather (Maricopa)
4 Chief Josh (Apache)	19 Chief Sitting Bull (Sioux)	31 Apache Papoose
5 Chief Black Man (Arapahoe)	20 Little Wound Chief (Ogalalla	32 Sac and Fox Papoose
6 Chief White Buffalo (Arapahoe)	Sioux)	33 Wichita Papoose
7 Kill Spotted Horse (Assiniboine)	21 Ahane (Wichita)	34 Two Little Braves
8 Chief Wets It (Assiniboine)	22 Blue Wings (Winnebago)	35 A Pair of Broncho Busters
9 Chief Mountain (Blackfeet)	23 Gov Diego Narango, Santa Clara	36 Chief Wolf Robe (full length)
10 Thunder Cloud (Blackfeet)	(Pueblo)	37 Chief Geronimo (civillian dress)
11 Three Fingers (Cheyennes)	24 Chief Grant Richards (Tonkawa)	Apache
12 Chief Wolf Robe (head) Cheyenne	25 Chief Joseph (Nez Perces)	38 Good Eagle (Sioux)
13 Alice Lone Bear (Sioux)	26 Chief Louison (Flathead)	39 Chief Red Bear (Arapahoe)
14 Annie Red Shirt (Sioux)	27 Ts-i-Do-We-Tsh (Pueblo)	40 Eagle Feather and Papoose(Sioux)
15 Broken Arm on Horseback		

Size 7 x 9 inches. Price, 5 cents each for 5 or more. Any 12 for 50 cents or the 40 for \$1.60.

AS A SPECIAL OFFER

We will send you BIRDS AND NATURE one year and the above 40 pictures for \$2.70. The regular value is \$3.10. BIRDS AND NATURE one year and 10 pictures for \$1.80.

A. W. MUMFORD, Publisher, 378 Wabash Ave., Chicago

BIRDS AND NATURE, \$1.50

I have just ordered Vols. II and III BIRDS AND NATURE for my nephew. He is more delighted with them than with anything he ever owned, and now we wish to order a subscription for the year 1904.

El Paso, Texas, Dec. 8, 1903.

BLANCHE GILBERT.

The educational value of BIRDS AND NATURE cannot be over estimated.

Cincinnati, O., Oct. 29, 1903.

DR. WM. A. GEOHEGAN.

I consider BIRDS AND NATURE one of the best means of inculcating a love of nature and of animals, as well as a means of supplementary information not given in schools.

Milwaukee, Wis., Nov. 8, 1903.

DR. J. C. KAUMHEIMER.

I am indeed fond of BIRDS AND NATURE and think it is the finest magazine of its kind I have ever seen, including everything besides the birds, which are so true to nature in their coloring. I take several periodicals but would sooner part with all than BIRDS AND NATURE.

Wellsboro, N. Y., Dec. 1, 1903.

W. H. BIRDSALL.

Kindly send me BIRDS AND NATURE for one year and fifty colored plates. I also want bound volumes XIII and XIV bound in one volume, red half morocco to match those we already have.

Asheville, N. C., Dec. 5, 1903.

JOAN A. ROEBLING.

Of "Baker's Shells of Land and Water"--\$2.50

Kindly deliver to the Auditorium Annex, Chicago, two Baker's SHELLS OF LAND AND WATER, for which I will send you \$5.00.

Auditorium, Chicago, Dec. 14, 1903.

MISS V. T. ARTZ.

Enclosed find \$2.50 for a copy of your SHELLS OF LAND AND WATER.

Lewistown, Ill., Dec. 1, 1903.

WM. JONES.

Worst's Gonstruction Work--75 cents

The copies of WORST'S CONSTRUCTION WORK have just been delivered to us. Herewith inclosed find draft \$48.00 to pay for them.

Easton Md., Dec. 16, 2903.

COUNTY EXAMINER OF PUBLIC SCHOOLS.

Golored Plates--2 cents each

The colored plates that appear in BIRDS AND NATURE are away above anything I have ever seen in any similar publication. I already have some of these plates but wish the complete list.

Waterbury, Conn., Dec. 7, 1903.

GEO. E. WILCOX.

A. W. MUMFORD, Publisher, 378 Wabash Ave., Chicago

American Colortype Company

BEG TO SUBMIT THE COLORED ILLUS-
TRATIONS ON THE FOLLOWING PAGES
AS SPECIMENS OF THEIR WORK

OFFICES:

CHICAGO: 135 ADAMS STREET
NEW YORK: 277 BROADWAY

WORKS: CHICAGO
NEW YORK
NEWARK

CONSTRUCTION WORK.

Its Relation to Number, Literature, History and Nature Work.

By EDWARD F. WORST, Prin. Ohio Street School, Austin, Ill.

This little volume contains one hundred and twenty models for construction work in bristol board, manila paper and mimeograph paper, with definite, dictated steps for making each one. They are planned originally for work in the primary grades. Among the articles made we find baskets and boxes of various kinds, furniture, trays, postage stamp holders, thread winder, pencil holder, comb case, cradle, candlestick, Puritan hat, Eskimo's sled, bill holder, card receiver, wind mill and King Alfred's lantern, etc., etc. Many of the forms are familiar to kindergartners through their work in card board modeling. Primary teachers will doubtless find it very useful. The exercises given in the book afford one means of manual training developing accuracy, familiarity of terms, opportunity for measurement, etc.

125 Illustrations. 108 pp., 5½x8½ in. 75 cents.

A. W. MUMFORD, Publisher

378 Wabash Avenue, Chicago

A Beautiful Bird Calendar

FOR 1904

A strikingly beautiful calendar. There is a sheet for each month, and upon each is mounted the picture of a bird in its natural colors. The sheets are 10x12 inches in size, and the calendar is printed in gilt.

A BEAUTIFUL AND USEFUL
Holiday Gift

Order Now for Yourself and Your Friends

Price 75 cents

A. W. MUMFORD, Publisher
378 Wabash Ave. CHICAGO

The Best TONIC

When you are all tired out, feel weak, sleep does not rest and the digestion and appetite are poor, there is no remedy so effective as **Horsford's Acid Phosphate**. It is a nerve food and a tonic that nourishes and strengthens the entire system. Insist on having

**Horsford's
Acid
Phosphate**

If your druggist can't supply you we will send small bottle, prepaid, on receipt of 25 cents.

Dumford Chemical Works, Providence, R. I.

BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL. XV.

JANUARY, 1904.

No. I

THE SNOW STORM.

Announced by all the trumpets of the sky,
Arrives the snow; and, driving o'er the fields,
Seems nowhere to alight, the whited air
Hides hills and woods, the river, and the heaven,
And veils the farmhouse at the garden's end.
The sled and traveler stopped, the courier's feet
Delayed, all friends shut out, the house inmates sit
Around the radiant fireplace, inclosed
In a tumultuous privacy of storm.
Come see the north wind's masonry:
Out of an unseen quarry, evermore
Furnished with tile, the fierce artificer
Curves his white bastions with projected roof,
Round every windward stake or tree or door;
Speeding, the myriad handed, his wild work,
So fanciful, so savage; naught cares he
For number or proportion. Mockingly,
On coop or kennel, he hangs Parian wreaths;
A swanlike form invests the hidden thorn,
Fills up the farmer's lane from wall to wall,
Mauger the farmer's sighs; and at the gate
A tapering turret overtops the work.
And when his hours are numbered, and the work
Is all his own, retiring as he were not,
Leaves, when the sun appears, astonished Art
To mimic in slow structures, stone by stone,
Built in an age, the mad wind's night work,
The frolic architecture of the snow.

—RALPH WALDO EMERSON.

THE ASH-THROATED FLYCATCHER.

(*Myriachus cinerascens.*)

The flycatchers form a strikingly characteristic group. Acting and looking alike, the various species "seem almost to be brothers and sisters from the same nest, varying in size and in other ways only as much as brothers and sisters do in other than bird-families." While watching for insects from the perch upon some bare twig, they remain perfectly quiet and with drooping tail seem almost as if in deep slumber. That they are not asleep but keenly watchful, is shown on the approach of a fly, or other insect, when they quickly launch forth and the insect is caught, for the bird seldom fails. Wherever there are trees, there also the flycatchers may be found. These birds belong to a family that is strictly American and is called Tyrannidae by the ornithologists.

The Ash-throated Flycatcher is a species of western North America, ranging from Oregon southward into Mexico and Central America. Its breeding and geographical ranges are the same. However, it is only a summer resident within the United States. This migratory characteristic of the bird's habits is more striking, for it does not seem to be affected by climatic conditions. "It is as much at home in the mountain fastness of the southern Sierra Nevadas, where Lieutenant Benson found it breeding commonly in the Sequoia National Park, in Tulare County, California, at an altitude of nine thousand feet, as in Death Valley, probably the hottest place in the United States, where a pair of these birds were seen at Furnace Creek, on June 21, 1891, by Dr. A. K. Fisher."

This Flycatcher is shy and, like most of its sister species, is inclined to lead a solitary life. Not only does it not associate with its own kind, but it is also very intolerant toward other birds that frequent the solitude of the thickets and groves in which it lives. Mr. Oliver Da-

vie says: "It is usually sole possessor of the tree in which its nest is built, all intruders are violently assailed and compelled to retreat." In Arizona, Captain Charles Bendire found that their favorite haunts "Were the denser mesquite thickets in the creek bottoms, oak groves along hillsides, and the shrubbery in canyons leading down from the mountains, but I also saw them occasionally on the more open plain covered with straggling mesquite trees and patches of cholla and other species of cacti."

The nests of this Flycatcher are usually placed in knotholes, or other cavities, in trees of almost any species that grow in the locality which it frequents. Mesquite, cottonwood, oak, sycamore and ash trees are among some of the species which it has selected for the site of its home. It also nests in the abandoned holes of woodpeckers and occasionally, like the creepers, it finds an abiding place beneath large pieces of loose bark. This Flycatcher has also been observed nesting in the "dry blossom-stalks of the yucca and the century-plant in southwestern New Mexico."

The nest of the Ash-throated Flycatcher is placed at various heights from the ground, though seldom at a greater elevation than twenty feet. The size of the nest varies also. If the hole is of large dimensions it is partly filled with stems, roots, grass and other available matter, and upon this the nest is built. The walls of the nest usually consist of matted hair and fur which is sometimes lined with feathers. Unlike the eastern crested flycatcher, the Ash-throated species seldom uses, in the construction of its nest, the exuviae of reptiles. Regarding the nesting habits of the Ash-throated Flycatcher, Captain Bendire says: "As nearly as I have been able to observe, I think the female does most of the work on the nest, but the male follows her around while in search of material and



FROM COL. CHI. ACAD. SCIENCES.

ASH-THROATED FLYCATCHER.
(*Myiarchus cinerascens*).
♂ Life-size.

COPYRIGHT 1908, BY A. W. MUMFORD, CHICAGO

apparently guards and sings to her. I have known a pair of these birds to finish a nest in one day. This was placed in a knothole in a mesquite stump, about eight feet from the ground, and composed entirely of deer hair."

Not unlike the other flycatchers the Ash-throated species is a songless bird. Yet it has a voice. "Its notes are few, loud and harsh, little varied and uttered from time to time as they fly after an insect from their accustomed perch."

WHAT THE CHILDREN FOUND OUT ABOUT DUCKS.

The children were all in their places very promptly for dinner that day. Father had been hunting, and they were expecting to have ducks and jelly, with Martha's good dressing, potatoes, and peas in a first course. Martha brought in the largest platter with three good-sized ducks on it, fat, brown and done to a turn.

"What kind of ducks are these, Father?" asked Ted.

"Pin-tail. (*Dafila acuta*.) You should see them feeding in mud flats and marshes near fresh water. When the gunner comes near they give the alarm in a noisy clattering note. They don't disperse when frightened, as many ducks do, but cluster together. They never dive except when winged."

"The wings are lovely. Mother is going to put them on my hat"; said Edith. "The pale blue and brown, with green edge is so odd and pretty."

"Where do they live? I mean, what parts of this country, and are they found in others?" asked Dick.

"They live in the whole northern part of this continent and in similar latitudes in Asia and Europe," said his father. "What did you notice about the tail, Ted?"

"It was dark brown, spotted with white," said Ted.

"Did you notice anything peculiar about the feathers?"

"Oh, I believe I did see two in the middle longer than the others, and slimmer too."

"Yes," said his father. "Last April I shot some Blue-winged Teal ducks and sent to those invalids at cousin Tom's, you remember. They're more delicate than the 'Pin-tails,' and at the first frost they hurry to the south. They breed in the north and come to the central states in September, and from the south in April. But then they don't stay long; they're on their way north."

"What do they live on?" asked Dick.

"Mostly on vegetables; the seeds of reeds or wild oats."

"Oh, they're the kind Don Alger told me he saw so often down South. The rice-fields were often under water, and they feed on the rice. They're caught in traps, hollow, and called 'Figure four.' (Perhaps it's from the shape;)" said Ted. "He saw colored boys stewing them with rice, and putting them in dry spots. Is their flesh better than these?"

"Yes, it's considered so," said his father, "but I would have to bring home a number of them, for I find these going so fast. Three ducks are hardly enough for my family," his father said laughing, as the waitress carried out the empty platter.

"They're certainly fine," the boys said in a hearty duet.

MRS. RHODES CAMPBELL.

NATURE'S ORCHESTRA.

How sweet when the sun sinks over the hills
To list to the sound of the rippling rills :

The murmuring brooks, the sighs of the trees,
The wail of the forest, seem symphonies :

The voice of the wind, the songs of the bird—
God's instrumentation—how oft have I heard !

Renowned in the art of musical ways,
The robin the first violin part essays ;

The bluebird plays second—great is his art,
For he wrings from his strings the songs of the heart.

Then stillness reigns king, till out of the hush
We hear the viola—the song of the thrush.

Off in the fields where the grain is yellow
The meadowlark tunes his voice, the cello ;

On a fallen tree in the stream's embrace,
A wild goose sits squawking the double bass ;

The wooddove is chanting like soft-keyed lute
Afar in the forest the strains of the flute.

The tones of the oboe are sweet to me—
And list ! 'tis the whippoorwill's melodie.

When clarionet echoes around me I hear,
I know that the catbird is visiting near.

The raven, bird of ill omen by lot,
Tuneth his voice to the notes of fagott ;

Then, cleaving the air like a sword, comes the note
Of the crow—'tis the trombone that sounds from his throat.

The owl, wise but blinded, sleeps in the morn ;
When darkness returns he hooteth the horn.

The sounds of the tympanies seldom fail
To tell me that woodpeckers dwell in the vale.

And last but not least, midst the twitter and hum,
The partridge gives forth the roll of the drum.

The wail of the forest how often I've heard—
The voice of the wind, the songs of the bird,

The murmuring brooks, the sighs of the tree—
All filled with devotion and melodie.

—ROBERT KERR COLVILLE.

THAT WINTER MORNING.

It differed from all other winter mornings. There have been other mornings as clear, as calm, as bright, with as deep a coloring of sky, and dense a shade, but "as one star differeth from another star in glory," so this morning differed from all other mornings, for, never since God said, "Let there be light," have there been two mornings just alike. I was out in my woods that morning, while yet the shades of night lay deep over forest and meadow. The wood lay in somber shade and the silence of its first long slumber. There was a crispness without chilliness in the air, that gave tone and elasticity to muscle and brain. The foliage of last season and many seasons lay as a cover over the sleeping plants, and each shrub and vine and tree was motionless as though carved in stone.

A silence that could be felt rested over the forest; a silence like one feels in the presence of quiet sleep. I have stood on the higher summits of the mountains, far above tree or shrub or animal life to give evidence of a living world, with nothing but illimitable space on either hand or above. *There was silence*; dead silence; oppressive silence. But this silence of the wood was different. It was a living, breathing silence. I have read how buildups in the near presence of a great conflagration have burst into flame, though never touched by spark or tongue of fire, kindled by the intense heat of the atmosphere. So I knew that this silence of the woods would soon be broken without the advent of any apparent disturbing element. It needed no great

stretch of fancy to hear the forest breathing in its sleep. Long, deep inspirations and expirations, that impressed one that they were in the presence of a mighty living organism. Soon shafts of light flamed up in the east, and the dimness in the wood gave place to shape and outline. Soon again the rising sun gilded the topmost boughs of the trees with a superabundance of golden light, that ran down over twig and branch and trunk, till the whole tree was bathed in the radiant coloring and it lay along the ground in rivulets and pools of light. In the evening we see but the shadows, as the declining sun casts his last beams amid the trees, but on this morning it was not shadows that were noticeable among the trees, but shafts and beams and patches of light, radiant, golden, glowing light, carrying a glory through the dark recesses of the forest. Soon I became aware that I was not alone, for nearby fluttering of wings and many exclamations of forest sounds called my attention to the numerous birds that had awakened and thus early were seeking that wherewith to break their fast.

The chickadees, with fearless freedom, were peering under pieces of bark, and overturning the leaves and searching around stumps and prostrate logs, seeking for tiny morsels to appease their ever present hunger. The tree sparrows in bevvies were flitting past to their feeding ground, amid the brown and feathery stalks of the goldenrod. Overhead a jay was calling to his mate in a neighboring tree, while up and down the tree

trunks, and around stumps, sometimes head up, and sometimes head down, the nuthatch peered and probed in every crack and cranny. Up on the dead branches of the oaks and hickories the woodpeckers were busy prospecting, driving their shafts deep into the heart of the limbs, and littering the ground underneath with chips in their search for hidden insects. Far up in the sky their blackness moving shadows, the crows in twos and threes and dozens were winging their way from the north to their feeding ground, while up and down and

around the trees the fox squirrels were gamboling in reckless glee, and a belated rabbit hopped past, making a rustling amid the dead leaves as he sought shelter in a tuft of grass for the day. From the surrounding farmsteads came the lowing of the cattle, the bleating of the sheep, the vociferous calling of the swine and the crowing of the fowls, and what but a few moments before seemed a part of eternal silence became a discordant clamor of life and bustle, and I turned reluctant feet from out the forest shade.

L. O. MOSHER.

A NESTING INCIDENT.

That the bird-world has its turbulations and criminal troubles as well as the human, was especially suggested to me on May 22. A pair of robins had a nest with three young against the trunk of an oak, resting on a strong branch about six feet up. The female, after flying from the nest at my approach, set up a series of "clucks" that at once betrayed her secret. Soon the male arrived and courageously dashed at me, only to turn aside and join the female in her cries of parental agony. Several minutes passed thus, the cries of the robins breaking the peace of the little valley. Confident that this unusual noise would soon bear fruit by attracting birds that were nesting in the vicinity, I stood near the nest and waited. As if by magic, a beautiful black and orange Baltimore oriole appeared in the branches of the oak. I stood admiring him as he flashed in the sunlight. Suddenly—just as suddenly as the other appeared—who should alight on the same branch but a scarlet tanager! I stood in wonderment: a Baltimore oriole and a scarlet tanager within two yards of each other and I within four yards of both! Surely nothing in the bird-world can equal this couple for brilliancy. The scarlet tanager soon disappeared, apparently satisfied with appearances, but blushing

fearfully at his inquisitiveness, and the oriole dashed away to attend to his own household duties. A red-eyed vireo with a catbird-like cry flew into the tree, and hopping about, loudly exclaimed his disapproval. A chipping sparrow joined him. Then a wood thrush whose nest I knew was close by, for I had already seen it, with his usual dignity came to a nearby tree. Last but not least (as he plainly expressed) came a bronzed grackle who, with a discordant cry, dashed into the tree to the consternation of all the rest. The male robin at once attacked him, but the grackle with a cackle of disdain would not budge. Thereupon the robin drew back and discussed the situation with his despairing mate. The grackle then flew to the tree from which the wood thrush had been quietly viewing all. He screamed in despair as the notorious nest-robber approached the priceless brood; but lacking the innate courage of his more powerful cousin, dared not bar the way.

Suddenly the whole group seemed to become aware of my presence. The grackle was the first to go and the rest disappeared in a twinkling—save the wood thrush and robins, whose excitement gradually subsided.

NORMAN O. FOERSTER.





GOLDEN EAGLE.
(*Aquila chrysaetos*).
 $\frac{1}{2}$ Life-size.

THE GOLDEN EAGLE.

(*Aquila chrysaëtos.*)

High soars a patriarchal oak,
Its umbrage seath'd by lightning stroke,
Upon whose topmost bough doth dwell
An Eagle, monarch of the dell,
O'erlooking from his eyrie grand
The wide expanse of forest land;
Now rising high in air to sweep
In circling rings the upper deep,
Now pois'd and balanc'd in mid-space,
As resting from his airy chase;
Now sweeping downward on its way,
As pirate bark swoops on its prey.

—ISAAC McLELLAN, "Ruffled Grouse."

Either in the coloring of their plumage, their form, their graceful flight, or in some of their habits, all birds are attractive. But with Pliny we may say, "Of all the birds with which we are acquainted, the Eagle is looked upon as the most noble, and the most remarkable for its strength." Pliny also says that it was Caius Marius that "assigned the Eagle exclusively to the Roman legions." He also tells us that it was held by the Romans to be the only bird that was never killed by lightning, and for this reason it was pronounced the armour-bearer of Jove.

The Golden Eagle—"The ancient Monarch of the birds"—is a resident of the colder and temperate regions of the northern hemisphere. In North America it may be found from the Arctic Ocean southward to Mexico. East of the Mississippi River isolated pairs are occasionally seen. It is more common in the mountain regions along the western part of North America. Here, in the solitude which the Eagle loves so well, on inaccessible cliffs it builds its nest and rears its young. Intense cold does not seem to affect it and its migrations, if the word may be applied to its wanderings, are merely for the purpose of obtaining a more liberal supply of food. There are excellent reasons for believing that the Golden Eagle not only becomes

attached to a nesting site and will occupy it year after year, but that it will also remain within prescribed limits as long as food is plentiful. Captain Charles Bendire quotes the observations of Mr. W. Steinbeck regarding the nesting of Golden Eagles near Hollister, California. These Eagles nested in trees and "each pair has its range and will drive any outsider away from it. These ranges are usually from two to six miles wide, and the birds become so attached to them that it seems impossible to drive them away." In an article published in the "Zoe" (April, 1890), Mr. H. R. Taylor writes as follows: "After several years' study of these Eagles the writer feels that he has formed the acquaintance of a number of individuals of this species, and this purely from the regularity of their habits. The first Eagle I ever saw in Santa Clara County was moving about the grassy top of a big hill, and on nearly every day thereafter I observed him at his favorite playground. On my visit the year following he was still doing 'lookout' duty at his old post. The nest of this Eagle had a curious ornament to the interior in the shape of a large soap root. The new nest, built the year after, also contained a soap root, which fact is of interest as showing the individuality of my feathered friend. An-

other Eagle I know has a singular predilection when nest-building for grain sacks, which it uses chiefly in the lining. When I first discovered this Eagle's nest there was one of these large sacks inside. The heavy storms of the next winter dislodged its nest and in the new one built I was surprised and interested to observe a grain sack."

To say that the nest of the Golden Eagle is very bulky does not give one a true conception of its size. It is more than bulky, it is extravagantly large. The nests vary from about three feet to seven or eight feet in height and from three feet to eight feet in diameter on top. Sticks two or more inches in diameter are often used in its construction, and the nest is nothing more than a platform with a slight depression, for the reception of the eggs. This is lined with straw, moss, grass, leaves or the fur of mammals and the feathers of birds which the Eagle has killed. The nest may be placed on a ledge of some rocky cliff or in the branches of large trees. The latter sites are more frequent in those retired localities where cliffs are not available. The Eagle will, however, at times choose a tree for its home even when a large cliff is near at hand. The female is very watchful of her eggs and is usually a close sitter. The male is attentive and assists his mate in the labor of incubation, and in case of her death "takes full care of the brood."

Though the Golden Eagle is a trim and handsome bird and exceeding keen of sight, it is shy and at all times on the lookout for intruders. Much has been written, both in poetry and prose, regarding the fierceness and valor of the Golden Eagles, but all careful observers are agreed that it is an arrant coward, and "as soon as the nest is approached leaves the neighborhood and does not return, even when there are young in the nest, until after the foragers have passed out of gun range." Captain Bendire thinks that this apparent cowardice may "possibly be due more to utter parental indifference than to actual cowardice, as three of these birds, an adult male caught in a trap, and a pair of young, male and female, taken from

the nest when about three weeks old and raised, did not seem to be deficient in spirit by any means, and were always ready to attack anything and everything on the slightest provocation."

Though the Golden Eagle is quite often untamable in confinement, there are very many instances where the birds have become quite gentle and tractable, even showing some attachment for their keeper. Pliny says: "There is a very famous story about an eagle at the city of Sestos. Having been reared by a little girl, it used to testify its gratitude for her kindness, first by bringing her birds, and in due time various kinds of prey; at last she died, upon which the bird threw itself on the lighted pile and was consumed with her body. In memory of this event, the inhabitants raised upon the spot what they called an heroic monument, in honor of Jupiter and the damsel, the Eagle being a bird consecrated to that divinity."

The Golden Eagle prefers to catch and kill its food, but when living forms are not easily obtainable, it will feed upon offal and carrion. The smaller mammals and game birds such as grouse and water fowl form its principal food. Where the noxious rodents are abundant the Golden Eagle devotes its attention mainly to them and is decidedly beneficial. If, however, wild game is not abundant it very often becomes quite destructive to the young of domestic animals.

Though the Golden Eagles are swift of flight and have a powerful body, they usually attack prey that is easily obtained and usually by dropping down upon it from their perch or from a lofty position while circling in the air. They are capable, however, of capturing agile game. Mr. Robert Ridgway relates the following incident: "We were standing a few yards in the rear of a tent when our attention was arrested by a rushing noise, and upon looking up the slope of the mountain we saw flying down its wooded side with the rapidity of an arrow a sage-hen pursued by two Eagles. The hen was about twenty yards in advance of her pursuers, exerting herself to the utmost to escape; her wings, from

their rapid motion, being scarcely visible. The Eagles in hot pursuit followed every undulation of the fugitive's course, steadily lessening the distance between them and the object of their pursuit; their wings not moving, except when a slight inclination was necessary to enable them to follow a curve in the course of the fugitive. So intent were they in the chase that they passed within twenty yards of us. They had scarcely gone

by, however, when the sage-hen, wearied by her continued exertion and hoping to conceal herself among the bushes, dropped to the ground; but no sooner had she touched it than she was immediately snatched up by the foremost of her relentless pursuers, who, not stopping in its flight, bore the prize rapidly toward the rocky summits of the higher peaks, accompanied by its mate."

REST YE HERE.

In the edge of Wyndham wood,
Where the pine trees tower and taper,
Where their fragrance, clean and good,
Rises like a censér's vapor;

There's a place for vagrant souls
In the waning day to linger,
While the sun the shaggy boles
Touches with vermilion finger.

Listen! Hear the breezes croon,
Sighing to the pine trees, singing
Soft a mellow, rhythmic rune,
Peace to life's wayfarers bringing.

Outdoor rovers, journey's end
Lies within this piney cloister;
Here pray rest while shadows blend,
Let the gay world romp and roister.

—FRANK FARRINGTON.

THE LAPLAND LONGSPUR.

(*Calcarius lapponicus.*)

O thou northland bobolink,
Looking over summer's brink
Up to winter, worn and dim,
Peering down from mountain rim,
Something takes me in thy note,
Quivering wing, and bubbling throat;
Something moves me in thy ways—
Bird, rejoicing in thy days,
In thy upward-hovering flight,
In thy suit of black and white.
Chestnut cape and circled crown,
In thy mate of speckled brown;
Surely I may pause and think
Of my boyhood's bobolink.

—John Burroughs, "To the Lapland Longspur."

The Lapland Longspur is a bird that delights in the fresh and bracing air of the Arctic regions of both continents. There it builds its nest, rears its young and voices its happiness in song. Loving the cool atmosphere of the North, it migrates southward only when its food supply of grain and other seeds is exhausted or becomes covered with snow. During the winter months they are abundant in the interior of the United States as far south as Kansas and are not uncommon in Texas.

The Lapland Longspurs are highly gregarious. They associate with the horned larks and the snowflakes though they range somewhat farther south in winter than the latter birds. Not infrequently, when a flock of horned larks is passing overhead, the presence of the Longspurs is revealed by their quiet but characteristic twitter. Like the snowflake, the hind claw is greatly developed and it is this characteristic that has given the bird of our illustration its common name.

In his "Birds of Manitoba," Mr. Ernest E. Thompson gives an interesting account of the northward migration of the Longspurs. He writes: "High in the air they fly in long, straggling

flocks, all singing together, a thousand voices, a tornado of whistling. Over the prairies they go, on to the newly-sown fields, and here the flocks drop a feeler—a sort of anchor or pivot, around which the whole body swings; then lifting again their anchor they wheel about and perform two or three evolutions, again drop their anchor and at length form a dense close column, and ceasing whistling, they swoop down to the field to forage. When sprung, they rise in a dense body, but at once spread out and begin the merry whistling. It is a peculiar sound of multitudinous melody, but not loud and in some respects like the sleigh-bell chorus of the black-bird."

Regarding the Lapland Longspur as it is known in its nesting home on the grassy flats of Alaska, Mr. E. W. Nelson has said: "The males, as if conscious of their handsome plumage, choose the tops of the only breaks in the monotonous level which are small, rounded knolls and tussocks. The male utters its song as it flies upward from one of these knolls, and when it reaches the height of ten or fifteen yards, it extends the points of its wings upward, forming a large V-shaped figure, and



FROM COL. CH. ACAD. SCIENCES.

619

LAPLAND LONGSPUR.
(*Calcarius lapponicus*).
—Life-size.

COPYRIGHT 1904, BY A. W. MUMFORD, CHICAGO
AMERICAN COLONY CO., CH. & N. Y.

floats gently to the ground, uttering, as it slowly sinks its liquid tones which fall in a tinkling succession upon the ear and are, perhaps, the sweetest notes that one hears during the entire spring-time of these regions. It is an exquisite jingling melody, having much less power than that of the bobolink, but with the same general character and, though shorter, it has even more melody than the song of that well known bird."

Mr. Montague Chamberlin, writing of the Longspurs in Greenland, speaks of their dropping song which he describes as "not very long, but has a fine flute-like tone, and though agreeable to the ear is rather melancholy, as all the notes of this bird are." Continuing, he says: "There is no variation in the song, nor is it repeated with great frequency. It is, however, the finest heard in these wilds." The Longspurs have

several alarm notes, and one which is uttered when a flock is flushed, has been likened to that of the kingfisher, but it is neither as loud or as harsh.

The nest of this attractive bird is placed on the ground under tufts of grass or bunches of small willows. It is constructed with moss and fine grasses and lined with grasses and frequently also with feathers. The female is a close sitter, and relies on the color of her plumage and the position of her nest, for protection. She will sometimes remain on her nest until nearly trodden on.

It is not a wonder that this beautiful and gentle bird should have inspired Mr. Burroughs to place in verse his impressions of its winsome ways and write:

Soaring over meadows wild
(Greener pastures never smiled);
Raining music from above,
Full of rapture, full of love.

THE CATTLE SPIDER.

The cattle spider, as its name indicates, is a terror to roaming herds of the tropics. It makes its burrow in the ground, and when its habitation is disturbed by the unwary tread of the animals it rushes from its hole and buries its tiny toxic fangs in the first tender spot it reaches, which is always just above the hoof. The wound thus inflicted caused inflammation and fever in two or three hours, while the venom produces extraordinary swelling. Unless prompt attention is given to the wounded animal

suppuration will eventually set in and the hoof will separate from the skin and fall off. This most frequently happens when domestic animals roam far away from the haciendas, and, having no means of communicating their ailments, die in great agony. Fortunately for these helpless brutes, the cattle spider is not numerous and locates his burrow remote from high-ways and field paths, seeming only to demand that he should be left undisturbed.

ANDREW JAMES MILLER.

AN ABANDONED FARM HOUSE AND WHAT WE MADE OF IT.

“There are no ways like the old ways.”

It was an old house, stretching its gray length from out of an old orchard. The weatherboards in the sunlight had a sheen of silver, while the shadowed end was of deep, cool violet.

The doors swung free, and dusky openings showed where had once been windows.

It was very warm that August day when we drove over the hill and saw for the first time this old, deserted house. We went up the lane from the highway to get a better view, and I was delighted to find that there were low, wide rooms; and in three of these were fire places, deep and broad.

The house bewitched me. It seemed to extend to us who had no real home, a most cordial and hospitable welcome. Later on we bought it and a bit of land, and began the reclaiming of this abandoned farm. But it was not until the next April when the soft, clinging wetness of springtime was everywhere; when the blackberry bushes were taking on rose color, rich and deep, and patches of vivid green were appearing in hollows and under hedgerows, and the dead weeds were giving a gray-brown, yellow tinge to the landscape, and the buds were just showing in the fruit trees, that we went over the hill to take possession of our own “The Old House.”

It required some outlay of money; a good deal of hard work and patience and time to establish ourselves in comfort. But the happy days passed under the patched roof have been a recompense, and we have a summer home, quaint, restful, and with a beauty of its own, gained from the long years of sunshine beating upon its unpainted sides, and the washings of the rain storms, and the touches of the snow and wind of many winters.

Our hearts were filled with the gladness of spring in those first days, and our love for nature gave us courage to undertake great deeds. It was then that tamarack trees were cut and shaped, and a rustic porch built where we set out the wild clematis brought from a nearby stream and which soon covered the crudeness of our work. Hollyhocks were planted to bloom at a later time into great pink and red masses about the kitchen door and one old chimney, while the sunflowers were glorious that first summer. An old-fashioned garden was platted at the side of the yard, and the currant bushes formed a hedge. The apple trees were trimmed and the brush pile left for a nesting place; a pair of brown thrashers took the hint and raised their family among its protective intricacies. And oh, how glad we were that we did not allow one gaunt, dead limb at the front of the house to be severed, for some bluebirds selected a woodpecker's hole in its side and set up housekeeping there, but were obliged to fight frequent battles with the sparrows for its possession. The morel mushrooms grew thick in our orchard that first spring, but never again. Why?

We found later, in our front yard, a dainty bed of the fairy ring mushrooms. This has increased in size each year until now the diameter of the ring must be at least nine feet. I think Dame Nature learned of our disappointment over the disappearance of those other mushrooms and planted these most delicate of fungi as a solace to our grief. This old mother is so very kind to those who love her and her works, and tries in many ways to cover up defects and make beautiful the rough places. Before our time she had wreathed the garden fence and rickety

gate leading to the orchard with a wealth of wild grape vine, a part of which climb high into the nearest tree, from one of whose boughs was suspended a gray lace, pensile nest of our orchard policeman, the Baltimore oriole. Always something new to see and to learn in an orchard wilderness. And the blossoms, oh, such masses of pink and white, and the orange and black, uniformed sentinel calling and flitting each spring, in the midst of all the glory. How we learned to watch for his first high, clear call, and his arrival marked a red-letter day in our calendar.

Frequently we were driven indoors by rain and cold, and once by a snow storm so severe that for days we were literally "snow bound." It was at that time that the robin who had built early in the crotch of a quince bush by the sitting-room window sat through one night of freezing sleet and cold upon her nest, trying to protect her very young fledglings. But the next day she flew away. Her efforts had been in vain; the nest was covered with a sheet of ice. Twice during the storm I saw some robins flying about the house, but they did not approach the quince tree.

One morning, a week later, I was fortunate in observing a robin flying off with something quite large in its mouth. In a few moments it returned and went to the nest, picked up what I saw to be a small, dead bird, and with it in its beak disappeared. Again this was repeated. I supposed that the bereaved parents would once more set up house-keeping in the nest that had so lately been the scene of a bird-land tragedy. Not so. It remained tenantless. But there was a robin family raised to maturity in another part of the yard, and I hope it belonged to that pair of early comers.

During bad weather we painted and papered our rooms in simple, old-time style; read and basked in the glow from the fireplaces, in one of which were the polished andirons from my grandfather's house. A sliding window was cut in the side of my dining-room, to give to it an added beauty and light, and with its drawn, white curtains, and a jug of jonquils or later of red poppies on its

ledge, and the sunlight shining through, it served its double purpose. In this room which had been the one room of the original house was the biggest fireplace of all, and here hung the crane upon which was cooked the first meal, by the first bride of the little home, seventy years before. She was living when we bought the place, and by special invitation came and spent the day with me. She was old, old, like the surroundings, and her face was so wrinkled that it had the appearance of a network of canals. Her sight was poor, and I do not think that she saw anything as it now exists. To her it was the place in which her children were born, where later her good man was brought home, mortally wounded, and where had stood the cradle in which her third baby died on the day with its father. Oh, the lonely, lonely years that stretched between that time and now. As she went away, crossing my threshold, which had first been hers, for the last time, I thought: There will come a year, the date of which no man can tell, when one of us, now living in the "Old House," will have gone on a long journey, and the other, will it be "he" or "she?" will find the place so filled by the echoes of vanished joys that "he" or "she" will close the door and pass on—alone. But the rippling, bubbling laughter of a pretty neighbor girl and her sweetheart, coming from the lane, displaced these gloomy thoughts, and I went out to rejoice with them, in the joy and fullness of the present life.

For my house furnishings I explored the attics of my mother and her friends, and was surprised at the harvest of old-fashioned things which they yielded. In the large, cool bedroom with the rafted ceiling, is the English-carved bedstead, found in a log house, among some rubbish. It has a pineapple on the top of each high post, and I show it with pride to all interested visitors. Here, too, is a "grandfather's clock," or, speaking literally, a clock case, for, alas! I am still seeking for the works. However, I have the effect if not the time, and in the dining-room a tall eight-day clock tells off the hours. A flax wheel, splint and rush bottomed chairs, old, wooden

rockers with flecks of paint adhering sufficiently to indicate a tone of blue or green, high mahogany bureaus, odd little stands and several old mirrors have been discovered and placed so as to give a seeming, good effect. Brass candlesticks and a pair of snuffers have also been presented to me, and every now and then a neighbor, friend, or even sometimes a stranger, brings or sends an old bit of china or a piece of furniture, and so the joy of collecting and of the resetting of my ever increasing wealth goes on. And the charm of the old rooms and the trees and the flowers and the

birds and the restful, happy days go on, until some morning a breath of winter creeps in with an October rain storm. Then we draw down the curtains, bolt the doors and leave the "Old House" nestling by the old orchard, whose branches cast gaunt shadows along its roof, and make odd, creaking music as they toss back and forth against the clapboards.

But when the buds are bursting and the birds are calling and the grass is showing the greens of springtime, we always plan to go again to summer in the "Old House."

ELLEN ROBERTSON MILLER.

THE HORNED TOAD.

He is a wonderful little creature. Although called a toad, he is shaped more like a lizard, having a broad flat back which tapers down to the tail and is covered with sharp points something like a rose thorn, and there is a crown of points about his head.

The largest Horned Toads are often six or eight inches long, but the babies are only an inch in length. Their backs are mottled brown and tan, and the under part of the body is lighter in color and has no spines on it. It is a curious fact that the Horned Toad is always the color of the ground on which he lives. Thus the kind All-Father takes care of this helpless little creature, for being the color of his background he is not so easily seen, and thus escapes from his enemies. Take a toad which is yellow and whose home is on yellow sand, and put him in a place where the ground is

darker in color and in a short time he will turn dark.

Many people believe that when the toad is angry he will spit blood and poison, but this is not true. He is the most harmless and gentle of creatures, and if teased will run away.

I have been told that when he is frightened one of his eyes will swell until blood spurts in a stream from it, but I have never known this to happen.

These helpless little creatures are caught in great quantities and chloroformed, then stuffed and sold to curio dealers.

Many boys are on the lookout for them, as by catching and selling them they can make a little money.

A family of Horned Toads lived under the hedge at Los Gatos, California, where I spent last summer. It was a very interesting to watch them.

HENRIETTA LEE COULLING.





THE FORSTER'S TERN.

(*Sterna forsteri*.)

The range of Forster's Tern may be considered as covering North America in general, "breeding from Manitoba southward to Virginia, Illinois, Texas and California." In winter it passes southward into Central America and to Brazil. It is the common Tern of the Mississippi Valley and is quite abundant on the larger inland waters as far north as Manitoba. It is far from common along the Atlantic coast excepting at Cobb's Island, Virginia, where it breeds in numbers, though the individuals of this species were not as numerous as were those of the common or Wilson's Tern.

In appearance as well as in its habits, Forster's Tern resembles the common tern (*Sterna hirundo*). The two species may, however, be distinguished by the color of the outer tail feathers; those of Forster's Tern having the inner webs darker colored than the outer webs, while the reverse is characteristic of the same feathers in the common tern. The two species may also be distinguished when on the wing by the peculiar grating note of the Forster's Tern, the sound of which has been likened by Dr. Ridgway to the "sonorous *qua-a-a* of the logger-head shrike."

Forster's Tern breeds in colonies and also in company with other terns and with gulls. Its nest, of flags and various water plants, is usually built in grassy marshes. The old birds are very watchful and carefully guard their nests, eggs and offspring. When disturbed at their nests, they become very noisy, "uttering a grating, monotonous note." It is said that at times, in their frenzy, they fly at an intruder, often approaching very close to his head.

Mr. E. W. Nelson describes nests of the Forster's Tern that he found in Northern Illinois as having a base two feet or more in diameter and the greatest depth as about eight inches. He also gives the following excellent record of its habits: "While near the nests the birds were circling high, overhead, now and then uttering a harsh cry, but concealing myself in the rice nearby, I soon secured several of the parent birds as they flew about the nests uttering their angry cries at the spoliation of their treasures. After the first bird fell into the water, the others showed the usual sympathy of their kind, but as the third or fourth specimen was killed, the remainder cautiously withdrew and uttered their complaints at a safer distance."

In the winter, the plumage of this beautiful tern shows a decided change. The head becomes white, more or less spotted with black; the eye is enclosed by a large black area; the bill becomes black and the feet brownish. The tail also is not as deeply forked as it is during the summer plumage.

Forster's Tern is quite often called Sea Swallow, though this term is more appropriately applied to the common or Wilson's tern. The terns, with swallow-like tails, slender outlines and graceful flight, are even more beautiful than their relatives, the gulls. Mr. Chapman has said: "Like the gulls, they seem so in harmony with their surroundings that no coast view is perfect from which the terns are missing. They add the requisite touch of life, and make still more impressive the thunder of the surf dashing over rocks or curling in long, combing waves on the beach."

BIRDS OF ONE YEAR.

On January I presented my double with a square card marked Bird Calendar and requested her to keep a record for the year of all the birds she might see and identify, and I promised to do likewise. Thus we might have a little friendly rivalry in getting the longer list, thus adding zest to the pastime, which is not lacking in interest by any means, if one loves to walk in the fields and woods, or listen to the songs of our feathered friends. Our lists grew apace even in winter. My double kept her eyes open when riding and once saw an owl and again a hawk. Then she often reported starting up a flock of partridges just beyond the garden wall, but as soon as I reached the spot, wishing so much to add one more to my list, not a bird would be in sight. Even to this day I have not been able to write partridges on my card.

Many would be surprised to know how many winter birds there were around us; common ones, too, for not many rare birds crossed our track. Tree sparrows and juncrows, cedar birds and the familiar blue jays were seen until my rival had a dozen on her list. That cheerful companion, the chickadee, came to the door for crumbs. As spring advanced this bird deceived us by his plaintive note of *phoebe* and when we thought we had a new bird, the wood pewee, he would follow it by his note *day, day, day*, or the full *chickadee, dee*.

Birds and interest increased after the middle of March and names were added faster to our lists. My double was ahead where I fear she still will be at the end of the year, but hope still urges me on, and who can live without hope?

There is as much pleasure in stalking a bird as in stalking larger game. One morning I discovered the first goldfinch in the elm tree and called at one door for my double; at the same moment I heard her calling me at a second door, to see a new bird. To our sur-

prise we had our eyes on the same bird. Or sometimes I would circle round a large tree to watch a bird above me, and suddenly meet my double doubling the same tree after the same bird. So the same name would go down at the same moment. But it was not always so for, sometimes I would take a walk by myself and come home exulting over a brown creeper (a very rare bird to us), or a flock of Maryland yellowthroats.

In May, we heard an illustrated lecture by the Audubon Society of Massachusetts, which added to our zeal. We had also a good bird-book to help us, and our own eyes and ears. We found that if we listened for the songs in our dooryard and watched the trees, we saw as many birds as if we took walks for the express purpose of finding them. For several weeks in the spring a flicker would wake us early by his prolonged notes, *nick, nick*, or *quick, quick, quick*, and he was discovered on one of the tall trees in the yard, but by the time we were up and out, he would be gone or just going, showing the yellow under his wings and the great white spot on his back. No endeavor to get near him to see the mottled brown back and the red spot on his head was successful. The hairy and downy woodpeckers usually linger long enough on a tree trunk to give one a good view, and handsome birds they are as they drum their rat-a-tat-tat.

The bobolinks appeared and sang merrily to us on a New Hampshire hill, and the chebec, with his peculiar note, which is the same as his name, was also there, and the brown thrasher with his beautiful song, and a black and white creeping warbler. The warblers are striking little birds with bright colors, but as it rained so often we missed most of those in May, the month they pass us on their way to the North. The sparrows are almost as numerous as the warblers. Who knows the tree sparrow from the

bush sparrow? Who can tell six varieties? The song sparrow is one of the sweetest, singing even when the stormy winds blow and never is mournful but to make one happy, says "Sweet, sweet, sweet, right merry cheer."

One day sitting in the hammock, I heard a bird's note near me and spied a young robin which had fallen out of the nest. As I was stooping, trying to feed it, I felt something strike my back, and there was a second which had come down forty or fifty feet from the elm tree and was not killed. We took pity on them and finding they would readily open their mouths for food, we kept them for a whole month. They lived under a peach basket on the safe side of the house, which our cats did not frequent, and they grew fat and were happy. Dickey and Dilly we christened them. Dicky was a bright bird and Dilly was his echo. They learned our steps, on the piazza, and would call for some dinner or answer our call by a loud chirp. It was a dry month for worms and in one or two meals, they would gulp down all we could dig. They had only twenty-five meals a day and so had to eat soaked cracker and berries with a few worms to make them grow. They soon learned to hop on the grass and then to fly a little.

I would perch them on a low branch and soon Dicky mustered courage to fly back to the piazza. Poor Dilly did not dare and would have to be taken down. Then we would give them a toss from our hand and away they would fly to a tree. The first night Dicky eluded us and could not be shut up in his safe basket, was an anxious one, but he came and chirped for breakfast before we were up. This was near the end of the month and both birds would light on the wall and chirp loudly for worms and as soon as fed, would fly away till they were hungry again. We feared they would never learn to feed themselves, they were so slow in doing it, and they did not begin until some weeks after they could fly. After they left our care, Dicky occasionally would call to us from the ash tree. We were sure it was

Dicky for he would answer us. Even as late as October twentieth I heard him. We hoped they joined some flock and went South for the winter. We had more than a little fun in keeping them and trust they will return to us next year. We are sure we should recognize Dicky's bright and earnest call, as we heard it so often.

Through the summer days we watched the nests around the house,—the golden robin's, hanging from the elm tree; the bluebird's in an old woodpecker's hole; the barn swallow's, the wren's by the brook on the low branch which could be swung round, bringing the nest close to view; and the phoebe's, who are old friends, for they merely raised the edge of last year's nest a little higher. We are sure they were the same pair, for the nest is on an unusual place on the ledge over the front door. They would fly back and forth while we sat and talked on the piazza underneath.

Now the leaves are falling and the birds are going to their winter homes. We saw a large flock that seemed to be resting or seeking food, for they flitted from tree to tree and twenty or thirty would be on the ground together. We saw bluebirds by the dozen among them, chippies, vireos and other little greenish birds we thought might be warblers. The air was full of birds.

My double's list stands at forty-five at present and our combined list at fifty. But as the authority on birds in our town says that possibly eighty-five may be seen here, we still have more to learn.

How pleasant it is to continue gaining knowledge whatever one's years may be! And all through the year, from January to January again, as we have sought the birds, we can say with Thoreau, "Each new year is a surprise to us. We find that we had virtually forgotten the note of each bird, and when we hear it again, it is remembered like a dream, reminding us of a previous state of existence. How happens it that the associations it awakens are always pleasing, never saddening, reminiscences of our sanest hours. The voice of Nature is always encouraging."

LUCIE A. PEABODY.

THE HABITS OF THE AMERICAN GOLDFINCH.

(*Spinus tristis*.)

The names Goldfinch and Wild Canary are applied indiscriminately by the casual observer to a score of different birds. Some time ago I overheard the following conversation:

"Oh, what a pretty bird. Did you see it?"

"No, what was it?"

"Why, I don't know. It had some yellow on it, and was rather small," continued the observer.

"Must be a Wild Canary," responded the second party.

Similar conclusions are not infrequently arrived at, when some warbler, sparrow, or flycatcher chances in the path of an inexperienced but enthusiastic bird admirer.

In the United States our true Goldfinch, or Wild Canary, remains with us the whole year, and is known in various phases of plumage according to the seasons of the year. The charming ways of a devoted pair of these hardy creatures should render them easy of identification at all times.

Few farm orchards or thistle patches are without a pair of these little birds. The male, with a voice equal in tone and quality to his beautiful plumage of black and yellow, finds a warm place in the heart of every bird-lover, naturalist, and agriculturist. These are not the only virtues possessed by the Goldfinch. He is of great economic value, and the number of seeds of the thistle, the dandelion and other noxious plants which these birds destroy, is astounding.

The female is less vivacious than her mate, but she has that same sweet call note, so full of expression. Their voices have always impressed me as having something human about them. Goldfinches are fond of each other's society, and on many a summer day have I

whiled away the hours witnessing the movements of these birds. Their flight is conducted in a peculiar, undulatory manner, as both sexes dart back and forth above the tree tops, whose dense foliage shelters many a nest of treasures. Twittering incessantly while on the wing, their life appears one perpetual volume of happiness.

Spring passes and occasionally the summer months elapse before the Goldfinch enters into domestic duties. The female is a skilled architect and her nest, after one year's exposure in this climate, appears more substantial than some other bird structures just completed.

During July and August, when thistle down is floating in the air, the female selects for a nesting site the crotch of a fruit or shade tree, often in close proximity to dwellings. Indian hemp, vegetable down and plant fibers are securely woven and matted together, forming a broad brimmed, deeply hollowed nest into which a bountiful supply of thistle down is placed. The nest is usually situated within twenty feet of the ground. Three to six faint bluish white eggs are laid, with an average length of sixty-five hundredths of an inch by forty-eight hundredths of an inch in breadth. The period of incubation is two weeks. This species has been found nestling on the tops of thistle plants, from which they often take the name Thistle Bird.

The nest illustrating this article was built in an oak shrub, five feet from the ground, and was taken September 1, 1901. At this late date incubation had only commenced, and although the timber about the nesting site swarmed with migrants passing southward, Mother Goldfinch expressed no anxiety over the late condition of her household affairs.

GERARD ALAN ABBOTT.

NEST OF THE AMERICAN GOLDFINCH.

(Spinus tristis).

3 Life-size.



THE AUNT JANE STORIES.

I. SOME CURIOUS BIRDS.

The pet canary "Sir Roger de Coverley," was dead. To console the children for their heartfelt loss, Aunt Jane ordered the "carry-all" to be brought out that she might take the children to visit the bird stores in the city in order, if possible, to replace the lost darling.

"We shall never find another bird such a pretty shade of yellow," said Madge.

"Or one with such cute, bright ways," cried Birdie.

"Nor one that can both sing and whistle as Roger did," mourned Alice.

"We will try to find his exact counterpart," responded Aunt Jane in a reassuring tone. "On our way through the woods, and beside the meadows, we will study ornithology. Now, get ready and we will be off at once."

When the last shoe was buttoned and the last sash properly adjusted, and the party were well on their way some one suddenly recollected that Aunt Jane had promised to tell them about "curious birds" or something "curious" about birds, she was not quite sure which, but either would do.

Thereupon Aunt Jane declared she would be obliging and do both. "Let us begin with the peculiarity of bird structure. Do any of you know how strangely birds are built?"

"I know something of that," said Frank, "you just take a skylark; why, he's a regular little balloon! Every one of his bones are hollow and he can inflate them from his lungs."

"I talked with the taxidermist who is to stuff 'Sir Roger,'" said Alice, "and he told me that the eyes of birds are enormous in proportion to the size of their brains. Many of them have eyes equal to telescopes, and what is more, they can in a few seconds focus the eyes so as to change from a telescope to a microscope, and the other way."

"That's what's the matter with the kestrel," cried Howard. "When he is away up in the air he can sight a field mouse, just as easy though the poor little mouse is very much the same color as the soil."

"The eagle has the same power, too," Aunt Jane rejoined. "He has also this peculiarity among birds, that he has no gizzard. His food is flesh and the coat of the stomach is strong enough to digest it. But, Alice, did the taxidermist tell you that a bird's brain is larger in proportion to the size of its body than a man's brain is, and that the singing birds have larger brains, proportionately than do birds of prey?"

"No, he did not, and I am glad to learn this fact. Auntie, I have often wondered why among all living things, only men and birds sing."

"Pshaw, Alice," cried Johnnie, "birds don't sing; they only whistle!"

"Please stop the 'carryall' and put John out for his slander upon the birds," cried Alice, indignantly. "You naughty boy! there never lived a musician upon earth who could reproduce the sweet, wild, weird tones of the birds."

"Not sing, indeed! why the mocking-bird with the same notes can make endless combinations. He has been known to sing 'Dixie' and to imitate airs played on the piano. He can produce all the sounds used by other birds and many that are common to animals."

"He is pretty good on bugs," responded John to this musical outburst. "They say he eats a hundred a day. You may admire him as a musician, but I praise him for his exterminating qualities."

"If that's all the practical work your mocking bird can do, just think of the little sparrow," said Howard. "It is said that he eats 3,300 caterpillars per week, besides numerous insects by the way of dessert. I do wonder who took the trouble to do up this arithmetic in his behalf."

"I can give you an idea of the voracity of some young thrushes from actual observation," Aunt Jane said. "I saw two thrushes feed their young two hundred and six times in one day!"

"The little gourmands!" cried the children in a chorus.

"Well," said Howard, "I always thought I'd like to be a bird and have

a gay, easy life, but I desire birdhood no longer if that is a specimen of how birds have to work to support a family! The thrush that wears a gold crown on her head is the worst bird to pretend she is lame, in order to lead one away from her nest. It is a sight well worth seeing. The nest is on the ground and has a canopy over it. I have heard Aunt Jane say that there are as many as one hundred and fifty different kinds of thrushes, but of them all I'd rather see the hermit thrush, which is called the 'swamp angel,' because his song is so sweet and solemn, far more beautiful than that of even the wood thrush."

"Oh, Howard," cried Johnnie, "don't join in with the girls in always rating something as 'sweet and solemn.' I'd rather see one whistling swan than all your hundred kinds of thrushes. I was reading an account of the whistling swan the other day, and I found out how curious he is. His wind-pipe falls into the chest, then turns back like a trumpet, and afterwards makes a second bend to join the lungs, and by means of this curious construction of the wind-pipe he can make a loud, shrill note of Whoogh! Whoogh!"

"Aunt Jane," cried Madge, "do you know who Mother Carey is? Please tell us about her chickens."

"Mother Carey's history is legendary, but it is supposed Carey comes from the Latin word *cara*. The dear mother is the Virgin Mary. Ignorant seamen hold her bird in great veneration, because they think she sends it to them to foretell a storm. Mother Carey's chicken is the 'Stormy petrel.' Petrel means 'Little Peter.' You know the Peter of Bible history walked upon the waves. This bird follows vessels, hovering on wing, with its web feet just touching the crest of the wave, so it looks precisely as if it were walking on the water, hence its name of 'Little Peter.' It is the smallest of all the web-footed birds, is quite black, except a few white feathers on the wings and near the tail."

"Other birds have been held in veneration haven't they?" Alice inquired.

"Yes, the owl of Minerva, Juno's peacock and the sacred ibis of the Egyptians.

It is thought the ibis was so highly prized on account of its snake killing ability, or else, as it was always present at the overflow of the Nile, that it had something to do with the fertility of the land. The body of the ibis was often embalmed, yet it is a very greedy, stupid bird. It will eat all it possibly can, and then stand waiting for the meal to digest, in order to eat another one forthwith."

"Stupid! I should say it was stupid," said Howard, "to stand still after eating. When we boys have demolished a lot of mother's doughnuts, we play base ball, and in almost less than no time we are ready for more."

"Then, Howard, you have forgotten your physiology! The bird is wiser than you are with all your school books. Food digests faster when you keep still for a while after eating," Alice remarked, glad of a chance to correct Howard.

"Well, I don't care to get so wise as to be in danger of having to be embalmed, and in spite of all the ibises of Egypt, I know that running does make a fellow hungry," Howard retorted.

"Why was the owl sacred to Minerva?" inquired John.

"Two reasons are assigned. One that Minerva was regarded as the moon, and so the nocturnal owl, whose large eyes see so well in the dark, was an appropriate emblem. The other reason is that she was the Goddess of Wisdom, and the owl, on account of the peculiar shape of his head, is thought to look very wise. The owl was an awesome bird to the ancient Egyptians, for the King had a custom, whenever the death of a person was decided upon, to send such person the image of an owl, whereupon the unfortunate one was expected to kill himself at once. No wonder the bird became one of ill-omen about which gathered many superstitious fancies."

"I want to know," said Madge, "why the peacock is Juno's bird? I have seen pictures where peacocks were drawing her chariot for her."

Aunt Jane replied:—"The peacock was consecrated to Juno because she represented the lower atmosphere,

where storms originate. The peacock was thought by its cry to give an indication of a change in the weather. Juno once became very angry with Argus, so she took from him his many eyes and placed them in the plumage of her favorite bird; hence the lovely eyes which decorate the peacock's tail. The cuckoo was also one of her symbols."

"And a rascally bird it is," cried Johnnie, "slipping its eggs into the nests of other birds, and sometimes tossing their eggs out to make room for its own."

"You forget," said Alice, "that the honey-bird belongs to the cuckoo family. It has the same bad habit of imposing its eggs upon other birds to hatch, but it steals the young birds and rears them itself. It is wonderful how it guides man to the honey tree, and, it is said, hovers over the tree and even points fixedly at all. It's also curious how wise the bees are to know they can not sting through the feathers, so they attack the eyes of the honey guide."

"I know," interrupted Birdie, "what the cow-bird says when he sings; it is this: 'Fidgety, fidgety, fidgety.'"

"I know what the cat-bird says," cried Madge. "It changes from 'quirt, quirt' to 'tut-tut,' 'mew, mew,' crack-rack-rack,' but its regular song is different."

"The Chewink says: 'Don't-ye-wink' 'don't-ye-wink,'" added Edith, and the golden crowned thrush cries, 'teacher; teacher.'"

"What a silly goose," said Howard, "to call for a teacher. He don't know when he is well off. When I was in Texas I heard a weather lark sing 'laziness will kill you; laziness will kill you.'"

"Oh, Howard, it was just your conscience; I never sang that at all, you imagined it," shouted the children.

"Yes, but he did, though. Everyone besides myself heard him, and agreed that that was what he sang. But if you will all stop laughing at me I will tell you about the butcher bird."

"Do, do," they all cried.

"The butcher bird catches beetles, mice and small birds, spears them to death on thorns, and hangs his victims

upon them in regular butcher fashion."

"What a naughty bird," cried the children in a chorus.

"The California woodpecker must be a vegetarian," said Aunt Jane. "He covers large sections of trees with acorns, firmly driven in for his winter use. A friend told me that the acorns were known to have been carried at least sixty miles. There is industry for you."

"Aunt Jane," said John, "can't you think of some other bird besides the ibis which is a snake hunter?"

"I have read a description of a very peculiar one," she replied. "It is called the pairsano, or road-runner. It has a long tail and a long sharp beak. It can kill a rattle-snake in a fair fight, but it likes to use strategy. It finds a sleeping rattle-snake and goes quietly to work building a wall about the snake out of spiny cactus. When it has finished the enclosure it strikes the snake with its sharp beak, which awakens, and makes the snake angry, so the snake coils for a spring, then seeks to retreat, but finding no outlet strikes against the thorny wall of the cactus again and again, until, in despair, he sinks his fangs in his own body, thus killing himself."

"The secretary-bird, so-called because he has a tuft of feathers on his head which looks like quill pens behind the ear, also kills snakes, and without injury to himself, because he is wise enough to use his wing as a shield upon which the poison of the snake has no effect."

"I don't like snake-killing birds; tell us about some nicer ones," cried Birdie.

"No; tell us about some worse ones, tell us about the horned guardian-birds," begged John.

"They are not an engaging class of birds, I assure you, but they are very useful to poor animals, who could scarcely live without them in hot climates. There is the ziczac, or crocodile bird, which not only frightens away the enemies of the crocodile, but also relieves it of the leeches which infest it. It is said to even go on this errand into the mouth of the crocodile and escape unharmed."

"Ugh! It has more faith in a croco-

dile than we'd have," exclaimed the children.

"Then there is the rhinoceros-bird, which belongs to the family of ravens. Its beak is a probe and it is the surgeon of the thick skinned animals, cleaning their sores of flies and insects. It also clears the animals of parasites, a very necessary service in the hot climate of Africa."

"By the way, Africa is the land of curious birds. The hammerhead is said to build a dome-shaped mud nest, which sometimes covers an area of forty square feet. In front of this aristocratic mansion the architect places a wooden platform, which he carpets with vegetable material. The home is divided into three apartments, main room, store room, and nursery,"

"Now Auntie, you are surely joking. You'll tell us next that he has a summer kitchen and a gasoline stove," exclaimed Howard.

"No indeed; I am in earnest; if anyone plays us false it is the naturalists who report the bird life of Africa for us, and *they* say that besides his architectural instinct this bird is also quite artistic in regard to ornament, and decorates his home with bric-a-brac in true modern style. He travels about to gather up such gems of art as buttons, bits of glass, polished stones, and so forth."

"What does he put in his storeroom?" John inquired.

"Any kind of provision he fancies. The female bird occupies the nursery, while he uses the main room, or, for an airing, sits upon the portico where the mother-bird and young ones sometimes join him.

"You need not laugh, for I know of another bird, the baza, of Burmah, who does all this and more."

"Impossible! Auntie; what could he do more than to build, carpet, provision and ornament such a villa?" said Alice in a skeptical tone.

"The baza surpasses the hammerhead in this, that while his home is smaller it is built in stories, the nursery being the upper chamber, which is more in accordance with our ideas of architecture—

question, but now pay attention, this is what insures the superiority of the baza as a householder, he lights up his home at night."

"Where does he get his gas? Where does he get candles? Where does he get lamps?" clamored the children in a breath.

"The male baza gets a lump of fresh clay and fastens it to the wall of Mrs. Baza's room. Then he captures some fire flies and sticks them securely in the moist clay, and their phosphorescent glow lights up the chamber. Not content with this, he hangs up lanterns of the same kind on the outside of his house.

"But there is another bird that surpasses both of these. He is the 'garden-bird' of Papira. His home is a yard in diameter, the roof is perfectly waterproof, and there is a gallery running around the inside of his house where he deposits his art collection. In addition to all this he lays out and ornaments his yard with fruit, flowers, fungi and mosses. When these fade he renews them, and substitutes a fresh collection.

"*Really and truly*, Aunt Jane," asked the astonished children with bated breath.

"Yes, and there is still another bird called the 'bower-builder' who builds and ornaments a place for public entertainments, where the birds give parties, and indulge in dancing!"

"She will tell us next," said Howard, "that the birds build churches, and go to meeting, but I, for one, will never believe it, there, now!"

"Why not?" Aunt Jane laughingly retorted. There is the 'parson-bird' with his little white necktie, who could doubtless preach as well as the bluejay scolds, whether it is an improvement or not is a

"But here is the shop of our bird fancier; come let us find a canary beautiful as a primrose."

"But promise us first that going home you will tell us something about the plumage of birds," coaxed Madge. "Now, please do, auntie."

"Of course I will do so, with pleasure," was the response, "for during the ride I am entirely at your service."

BELLE PAXSON DRURY.





SPECIMEN LOANED BY MR. CARTER H. HARRISON.

MONTANA GRAYLING.
(*Thymallus ontariensis montanus*).
About 1/3 life size.

THE MONTANA GRAYLING.

(*Thymallus ontariensis montanus*.)

I wind about, and in and out,
With here a blossom sailing,
And here and there a lusty trout,
And here and there a Grayling.

And here and there a foamy flake
Upon me, as I travel
With many a silvery waterbreak
Above the golden gravel.

—ALFRED TENNYSON, "The Brook."

The Graylings are among the most beautiful of the fishes. Bright in color and graceful in form, they have been called "the flowers of the finny tribes." There are about five species and all are fascinating to look upon. Two of the species and one variety are natives of North America. The Graylings frequent only the rivers of cold water in the northern temperate and Arctic regions. They are active and gamy, and some anglers claim that their game qualities are fully the equal of those of the brook trout. The food also is like that of the trout and consists of insects that light or fall upon the surface of the stream.

The generic range of these fishes is quite extensive: they are found in Lapland and England; throughout Europe as far southward as Italy; in Northern Asia and in the rivers of Alaska and British America. In the United States, however, Graylings are found in but two localities, certain streams of Michigan and the tributaries of the Missouri River. Those of the Missouri region are considered a variety of the Michigan species and differ but little from that form in general appearance. The characteristics of the two geographical forms are so nearly alike, the following account of Mr. James W. Milner, regarding the Michigan Grayling, will give a very excellent idea of the Montana Grayling. He says: "The experience of the two days on the river (the Ausable of Michi-

gan) proved them to be free, strong biters, eagerly taking the fly, and with all the gaminess in resisting the effort to take them from the water with a hook that is the special quality demanded by the anglers. They were decided to be quite equal to the brook-trout on the table; and for grace of form and beauty of color on the body and the great dorsal fin that is the peculiar mark of the genus, they surpassed all of the so-termed game-fishes."

The Grayling, as a rule, does not leap out of the water when the angler is trying to "land" it, but rather flounders about in positions that are even more liable to tear the hook from its tender mouth than would the act of leaping. By the active use of its beautifully tinted and large dorsal-fin, which is one of the most distinguishing characteristics of the Grayling, it may escape at a point in the combat when the success of the angler seems assured.

The Graylings have a peculiar odor which led the ancient peoples to give it the name *Thymallus* because of its resemblance to the odor of thyme. Some, however, have likened the odor of the Graylings of the Old World to that of a cucumber and the Australian species is frequently called the cucumber fish.

The average size of the Montana Grayling is from ten to twelve inches and the weight from one-half to one pound. Individuals have been taken,

however, that were about twenty inches in length and weighing about two pounds.

All who are familiar with the Grayling must agree with the angler who said: "There is no species sought for by anglers that surpasses the Graylings in beauty. They are more elegantly formed and more graceful than the trout,

and their great dorsal fin is a superb mark of loveliness."

That angler whose fortune it may be to see the Grayling swimming in the clear cool water of some northern river can say with Shakespeare:

The pleasant'st angling is to see the fish
Cut, with her golden oars, the silvery stream,
And greedily devour the treacherous bait.

SETH MINDWELL.

"A NATURALIST'S CALENDAR."

To January with a weary sigh
The listless redwing makes his presence known;
A chattering flock, the fieldfares pass on high:
The burns are turned to glass, the clods to stone.

In February comes a sudden rush
Of burns from binding frost set free, and then
Loud blares the bugle of the misselthrush
Against the shriller piping of the wren.

March bids the mavis fill the show with mirth,
The merle begins to try his flute anew:
The buds are all astir within the earth,
And here and there some bolder bloom peeps through.

April brings the swallow to our land,
The soaring laverock fills the air with glee:
The flowers are trooping forth on every hand,
And blythely to her labour goes the bee.

May is the month! The other months may yield
Their boon of starry night or sunny day,
But garden tells to orchard, wood to field,
The self-same tale—"No month can vie with May."

June and the rose have kept their tryste of old;
The cuckoo flouts them hoarsely, but they scorn
His mockery: sweetly their tale is told
Year after year of ancient love new-born.

In July hovering martins haunt the eaves
To feed their nestlings; robins, newly-flown,
Lurk in the covert of the thick-hung leaves,
And lisp a baby-language of their own.

August is all but silent; here and there
The cheerless bunting thrums a wiry chord:
The last-fledged wagtail claims his mother's care,
Who trips with food to meet him on the sward.

September brings the ring-ouzel to strip
The rowans, teaches rooks a softer note,
Blackens the bramble, reddens haw and hip,
And sets the clotted thistle-down afloat.

Sad-faced October bids the swallows flee,
Musters the waders on the sandy shore,
Flings the leaves down in showers from bush and tree,
And shows us many a nest unseen before.

November finds the garden bare indeed;
The birds begin to look for crumbs again,
Flung out by kindly hands to serve their need,
And almost lay aside their fear of men.

Lastly, December enters, glad to ply
His frosty whip and make us own his power;
Only the robin and the wren defy
His frown and hail with song each milder hour.

—HENRY JOHNSTONE.

BIRD SYMPATHY.

A little bird incident I saw recently proves beyond doubt that among the emotions accredited to the feathered creatures, their sympathy for each other in time of trouble is a fact. One winter morning while walking to school, I was attracted by a loud commotion in a near-by maple, created by about a dozen English sparrows. It seems that one had caught his tail-feathers in a crevice of the bark, and losing his balance had fallen headlong over the branch, only to hang securely fastened by his tail. His frantic efforts to release himself were of no avail, for the more he fluttered and chirped the more firmly the feathers

seemed to hold. His mates and neighbors were soon drawn in numbers about him, and their efforts to help him were amusing and curious in the extreme.

Two or three at a time would actually hang on him, and the way they hopped about, chirped and took turns at hanging on their unfortunate brother would wring pity from a heart of stone. I shook the tree violently, and scared all the birds away, but still the tail-feather held fast. When finally I succeeded in freeing him, he fluttered away nearly exhausted, a frightened but thankful sparrow.

THOMAS HAYS UZZELL.

THE WATERMELON.

(*Citrullus vulgaris*.)

The word melon is derived from a Greek word, signifying apple, which was originally bestowed upon the fruit because of a fancied similarity of shape. The melons belong to the natural order Curcubitaceae, which embraces plants of tropical origin, many of which, however, have easily adapted themselves to more temperate climates. The canteloupe, the citron, the musk and nutmeg melons have been cultivated for centuries in India, Persia, Spain and Italy. In fact the name canteloupe was given to the fruit because of its cultivation in a town, so called, situated fifteen miles from Rome, having been raised there since the Mithridatic war. It is said that the original plants were introduced by Lucullus from Armenia.

The Watermelon *Citrullus vulgaris*, is a native of Africa. The generic name *Citrullus* is derived from the fact that the pulp of the Watermelon is sometimes orange or citrus colored, the specific term, *vulgaris*, meaning common, referring to its general distribution in its native land. In fact Livingston states that in Africa large areas are covered by the plants growing in a wild state and in New Jersey and Long Island, where large fields are devoted to its cultivation the plants show a marked tendency to spread spontaneously. Watermelons were familiar to the ancient Egyptians and it is known that they were cultivated in Asia at an early date. At the beginning of the Christian era the fruit was highly prized in all of the Mediterranean countries and it is prob-

able that the forms common in the United States were derived from Italy.

The Watermelon belongs to an eminently respectable but not a particularly aristocratic family. Its near relations are the gourd, the cucumber, the pumpkin and the squash. There is probably no country in which this fruit is so largely cultivated as in the United States, its habitat being limited, however, to the southern and middle portions of North America to the fourth degree of latitude. The short seasons of the more northern states are unfitted for the complete development of the fruit. It is peculiar in the fact that it yields no important by-products with the exception that its saccharine matter may be converted into sugar. The juices of the fruit cannot be converted into wine or vinegar, and unlike the canteloupe it does not produce a good brandy when distilled.

The plants are annual, trailing, slender vines extending from eight to fifteen feet. The leaves are five lobed, from three to six inches in length and in dry countries the plants often supply vegetation when all others are dried up. The leaves are possessed of an unusual perspiratory power, hence they require a greater amount of moisture than the majority of plants, the roots often extending a considerable distance to reach water. For this reason the varieties growing in the irrigated fields of Persia, the floating islands of Cashmere and the springy river beds of India have long been famous.

CHARLES S. RADDIN.



WATERMELON.
(*Citrullus vulgaris*).
 $\frac{1}{4}$ Life-size.

THE STRANGE STORY OF MISS CECROPIA.

Every one at all familiar with the great families of the earth knows that mine, the Moths, have always been famous for their beauty and elegance, and for their remarkable life history. Of the former qualification for notoriety, modesty forbids me to speak what family pride might dictate. The latter trait is, of course, shared by all insects; only it is very pronounced in us. Each one literally lives the lives of three distinct animals before its cycle is complete. As they are so different from each other, you can guess that many strange adventures come to us. At each new phase we begin again in a new world with the legacy of our last life to help us.

But the story of my life and that of my immediate family, I have reason to believe, is unique, even for a Moth.

Of my parentage I know little. In fact, it seems strange to me, and not at all unfilial, that one should care in the least who one's parents were. Neither do I think it at all reprehensible that my father probably never so much as heard of his offspring, and that my mother left us at a tender age without a thought as to our welfare. It is a time-honored custom in our family to let children take the entire care of themselves; and though the rate of infant mortality is high, yet in those that survive it develops strong characters. And really, when you come to think of it, how could a young couple look after some three or four hundred youngsters when their own lives extend over but a few days at most?

While the question of parentage can be dismissed with a few words, the subject of birth-place is extremely important. Indeed, it usually determines at once whether prompt extinction or long life shall be our fate. All that I know of mine was told me by my second foster-mother, and here begins the remarkable part of my story. For, unlike most of our race, my subsequent life was passed far away from the place of my birth. And not only have I had a foster-mother, but I have had two!

I am told, then, by my second foster-

mother, who had the information from my first by letter when I was transferred to her care, that I, together with some scores of my brothers and sisters, began existence on the night of June 5, in a little town in Vermont. It is surmised that my mother was held in captivity in a strange place called the "Crawlers," where lived other captives of her kind, of whom you may read in another place. In the records of this house, kept by my first foster-mother, I presume will be found a full account of my true mother's career, for she seems to have been a moth of great distinction and to have received marked attention in her lifetime. We were at this time, I am told, spherical eggs, about the size of a large pin-head, opaque, pinkish, each with a brown blotch on one side. We were probably glued in rows on the upper side of some leaf.

Shortly after we were ushered into existence, some score of us were put into a quill, covered over with cotton, placed in a letter on which was written the first chapter of our lives, and dispatched by post to a far country. Of that long strange journey with hundreds of packages and letters, over hundreds of miles of country, I have not the faintest remembrance. Our foster-mother's confidence in our thick shells and our cotton packing was not misplaced. Indeed, this our longest journey was made with far less danger to life and limb than were many subsequent ones in our eventful history.

On a bright sunny day thirty-six hours later, we were taken from our close quarters and placed, still on our beds of cotton, in a little tin box. From now on we were in the hands of our rescuer and sole protector, our second foster-mother, and Wisconsin, and not Vermont, was destined to be our home.

But our journeyings were not ended. A few days later we in our tin box were packed up in a leather bag, in company with some near relatives of ours, the Polyphemus Moths, who had traveled the same route as we a few days earlier, but who, I am sorry to say, did not sur-

vive their first larval moult. This journey was short; we were confined in the leather case two days, but there were frequent short periods when we were taken out for inspection. Great changes were going on inside our thick shells, hints of which were given by their leaden color. Sixteen days in this stage, when one by one we ate our way out to the light of day and our conscious existence had begun.

We were then, you must know, tiny caterpillars fully a quarter of an inch long, with bodies all black. Of course, we had the six tiny jointed legs on the front part or thorax, as all well regulated Insects have, and in addition four pairs of prop-legs and one pair of anal props, thick flaps by which we could cling tightly to a support. Then on most of the segments or rings of the body were little bunches or tubercles, horn-colored at first, and bearing each a few little short hairs. Little *Cecropias* do not eat their cast shells, as do some of their near relatives. It has always seemed to me that they must be hard to digest.

We were at this time, and indeed always, objects of much interest to our foster-mother, though we cannot lay any great claims to beauty at this early stage, our marvelous colors not appearing until later. We were often on exhibition, but we came to take this much as a matter of course. I remember in particular two little maids who came often to look at us. One came to admire, but the other called us worms, and said other slanderous things. Now everybody knows that we have no relationship with the worms, who are really very vulgar creatures living in the earth without legs or wings or eyes.

To have received so much attention had we lived natural lives out of doors, would have meant almost certain death; for eyes sharp enough to spy us out would have belonged to enemies. And this, of course, was why we are given black coats while we are small, to match the markings on stems and leaves; but before we become large enough to be conspicuous our color changes to green to blend with the foliage. Our most

dreaded enemies at first are the ichneumon-flies which deposit their eggs when they get a chance in the skin of the caterpillars when it is soft after a moult. There they hatch and undergo changes similar to our own, sapping the life blood and finally causing the untimely death of their victims.

Our diet was a matter of great concern, as it always is with infants. A large book on the care of young Moths was consulted and by its advice willow leaves were selected. From the second day after hatching when we began to eat, until the close of larval life when we gave up eating, this was our only food. It was brought to us regularly, fresh picked with the dew still upon it.

I am told that with human infants teething is the trying period; with Moths it is moulting. This ordeal must be gone through with not once but many times. You see, our skins are not very elastic; and as we eat and grow rapidly, it soon gets too small and must be shed. A new skin is always forming under the old, which cracks finally and is wriggled off. We moulted first about the fourth day, after which we were much larger. Then on the ninth day again we changed, and found our new skins had some traces of yellow. About three weeks later most of us were ready for a third skin; our heads were then green with black markings, bodies yellow with lines of black dots, and some of the tubercles which from now on were very prominent, were colored red and yellow. At one of these early moults it was that most of our number met death from some unknown trouble; and only five of us survived. But even this was probably a larger number than could have lived under natural conditions unprotected as we were.

Our little cage soon became too small for us, and we were put into a larger one. At first we were almost lost in it, but before many weeks we had grown to it; and before the summer was over a third and much larger one was needed.

After our second moult we were again taken on a journey by train. In the same leather prison we spent a hot and dusty night and day. Fortunately

we need little air at this time, else we had choked. Then there followed a new kind of experience, a short ride in a lumber wagon over a sandy road, which brought us to the shores of a lake. Across this we were carried with the baggage in a boat, to an island which was destined to be our home for some weeks. And the weeks that followed were the most interesting in our career. Eating early and late except when we were quietly resting, we grew at an enormous rate. Our bodies had become a beautiful light blue-green, with red on the anterior tubercles and yellow on the posterior, while the lateral ones were pale blue, and all bore short black bristles.

Now that we were settled for the summer the cover was removed from the tin box, our cage, and glass put over us instead. We were placed where we had the subdued light and cool air from a north window overlooking the water. Each morning we were taken out carefully, clinging to the twigs, our house was swept out, and fresh food was given us, always willows, the freshest green tips dipped in water. As our appetites grew our day's supply was often nearly exhausted before the next day came. When clinging by our legs and props lengthwise of a twig, even a strong wind could scarcely have blown us away had we been living out of doors.

Our heavy bodies did not facilitate rapid movement, and we were quite content to stay where there was safety and food. About this time we became conscious of the presence of a neighbor and near relative, a Sphinx Moth Caterpillar, raised like ourselves from the egg in captivity, and kept in a box near ours. I must say he was rather plain-looking, as indeed are all his family. He did not fulfill the promise of his early youth; for from a beautiful green like ours he changed rapidly at one of the later moults to a dirty brown; and as time went on developed strange uncanny snaky looks. There was a large tubercle like an eye on the end of his body, in place of the little horn he had at first. Then markings appeared which looked like a serpent's scales. And strangest

of all, he could make a squeaky noise and rear the tail end of the body in the air when disturbed. Of course, these were all innocent little devices to frighten birds, but they did not add to his attractiveness. He was restless and wanted to move about. His long, lithe body would wriggle itself out over the top of the box whenever by chance he saw a crack. One night the wind pushed the glass cover off, and out he crawled, bound on a foraging expedition. He was never seen again, though every crack and cranny of that room was searched. He probably met the fate he deserved for this ingratitude to his keeper, who had so generously given him his summer outing free of all trouble and expense to him.

When we were two months old and had reached the magnificent length of three inches, we made our last moult. Our old skins, as usual, became dingy, and a tight feeling kept us very quiet for about twenty-four hours before the event. I, the last of the brood to change, was the only one who did not avoid an audience at this critical time. Two human spectators I had; they laid aside all work for the morning to watch me. But watched or not, the change must be made. Hanging head downward from the side of the cage, I waited till the skin along the back had split. The covering of the head is always heavy and hard and it drops off like a mask, the horny jaws with it. Then the prop legs can be pulled out, and finally, in a few hours, the cast skin, with the linings of the intestines and trachea or air-tubes, is wriggled off, and lies a whitish, stiff, and wornout coat beside us.

A few days after this event, our travels began again, for this busy time of ours was vacation, it seems, for our foster-mother, and summer was nearly over. We finished this journey with good appetites and in the best of health, and found ourselves back again to the place of our hatching; but how changed from the tiny little black mites we were when we left two months before.

And now we were near the end of this the second stage of existence, the larval. Its approach we knew by the fail-

ing appetites. Willow no longer tasted good. Then we became aware of new possibilities. In the mouth of each had grown a little spinning machine. It was a tiny tube, the end of a duct which connects with silk glands in the abdomen. Gummy fluid secreted by these glands can be forced to the mouth of the spinneret, and applied to some support when it can be drawn out, the air hardening it. Its use was clear; it was for making our case for the long winter's sleep. Clinging lengthwise of a twig, the head could be moved slowly back and forth till a large loose skeleton of a cocoon was spun. As you know, our family are famous spinners, one of our cousins, the Silk Worm, being especially an adept in the art. Inside the frame work we toiled, running threads back and forth till a close mesh was formed, which grew darker by exposure to the air; and we had shut ourselves out from the light of day. Then a lining was made of a closer network of threads, and our house, double-walled with plenty of air space between, was finished after two days of incessant toil. Our quarters even in the big tin box were decidedly too close for so many of us, and we had to plaster ourselves in close proximity to the sides. I am sure that we could have done better out of doors with a large dark twig for a foundation. And then, just at this critical period, we had to go on another trip. It seems that vacations are made for traveling. But this job of spinning once begun had to be carried on, even though we were riding on cars and staying in strange places. The last of us finished our work just after the end of this journey, the last, we hope, that we shall ever take. To our surprise, we were told that we were now back where we were first at the end of our first journey, when we were still eggs.

But the discomforts of captivity were more than made up for in the greater safety of our lives. Left to ourselves, had we succeeded in our spinning, our strong rain-proof and inconspicuous case might not always have protected us from the new enemies that awaited us. More fortunate than some Moths, we usually escape the birds in the caterpillar

stage, to whom, fortunately, our flesh is distasteful. But in the fall, the bluejay and other birds go a-cocooning, and their sharp eyes may spy us out, and their sharp bills will then cut through our tough cases like a knife, and we will be dragged out in our helpless condition to satisfy their voracious appetites.

But if well built cocoons in well selected places save us from all perils, great changes go on inside the pupae-cases, not often seen by mortal eyes. The body shortens, the organs change, the tissues are absorbed. The larval skin is shed, and lies a useless covering, while the body is now covered by a hard case bearing on the outside the marking which foreshadows the structure of the organs of the adults—head, thorax, abdomen, limbs, wings—reformed out of the old larval organs. The change from the larval to the adult Moth is enormous, and it takes Mother Nature all winter to complete it.

Our warm winter quarters will hasten the change. Some bright day in March, I shall awake from this long dormant stage, eat a way out of my cocoon and emerge with wet and heavy wings, a wonder to myself and the center of an admiring crowd of school children. We are the largest of the Moths, with sometimes a spread of six inches to the wings. Head and thorax rusty red, abdomen red with bands of red and white, furry skins, long delicately jointed legs—we are simply superb. But the crowning glory will be my wings of gray with black and white and red markings, eye spots on the front pair, a crescent of white bordered with red and black on all four. Formed of pads of skin, richly supplied with air canals, they will spread and dry when waved slowly in the air.

I shall need no food, indeed I shall have no mouth in this short but brilliant career of a few days. I shall fly by night, after a day or two spent in drying my wings. I shall find my mate, who will be smaller than I, but have larger and more beautiful antennae or feelers. And then after the eggs are laid on some convenient twigs, this short but eventful life will be ended like the lives of our parents before us. RUTH MARSHALL.





SULPHURY POLYPORUS.
(*Polyporus sulphureus*).
 $\frac{1}{2}$ Life-size

COPYRIGHT 1904, BY A. W. MUMFORD, CHICAGO

THE SULPHURY POLYPOUS.

(*Polyporus sulphureus.*)

This attractive mushroom may be easily known by its bright colors and its clustered mode of growth. Our illustration is a faithful reproduction of beautiful specimens of the Sulphury Polyporus which grew on a living black oak tree about fifteen feet from the ground. Though the habit of this mushroom is to grow only on dead wood, the host of the two illustrated was seemingly sound throughout.

When young, if cut or broken in warm weather, a yellowish juice will exude. The caps overlap each other and are frequently five inches or more in width. The flesh is white and usually not more than one-half an inch in thickness. The young cap has a yellowish-red or light orange color which fades as growth continues, to a beautiful yellow color, especially on the margins. A large cluster of the caps of this mushroom with their bright colors and wavy margins form a beautiful picture on the dark background of a stump, a log or a tree. It is not particular about the kind of wood on which it grows. The dead wood of almost any species of trees may serve as its host and not infrequently it will grow upon those in an orchard.

There is a variety of the Sulphury Polyporus which Dr. Peck has suggested might be named *glomeratus*. "In it a multitude of small caps are so closely

and intimately united that their individuality is lost in the large mass which they form. Irregular and unequal holes or cavities in the general surface of the mass, afford opportunity for a partial development of the spores on the imperfect caps." The spore tubes of the typical form are very short, of a bright sulphur-yellow color and situated on the underside of the cap. The very small spores are white and elliptical in form.

The Sulphury Polyporus is an excellent illustration of the fallacy of the belief that the highly colored mushrooms are all poisonous. It is not only edible but palatable as well. However, only the young caps should be used as food, for mature specimens are not only tough but very indigestible and unpleasant to the taste. Thinly slicing the young caps and frying them in butter, is perhaps the most satisfactory method of preparing this Mushroom for the table, though it may be prepared in other ways. This species has a wide distribution. It may be found in the forests or in the orchards; on the dead wood of trees, on the lawn or anywhere where conditions are favorable for its growth. Though it may be found from May to November, it is more common and grows more luxuriantly in wet weather.

A GLASS ROAD.

Not least among the wonders of our National Yellowstone Park are the singular obsidian cliffs. They are formed of a volcanic glass, that, in color, resembles the cheap green bottles of commerce. They rise in, almost, vertical columns, which, though opaque, glisten like jet.

At their base is a road, probably unique upon the globe. It consists en-

tirely of glass, and is a quarter of a mile long. To construct it large fires were built upon the obsidian mass: Cold water was then dashed on the heated surface, causing it to crack and crumble to pieces. This tedious undertaking, finally, resulted in a roadway that is the admiration and wonder of all who behold it.

LOUISE JAMISON.

THE FOG.

Up from the dark recesses
Of the mist enshrouded night,
Like a ghostly pall arising
To smother out the light,

Comes the chill fog of winter
When the northern lights grow dim;
And the mighty constellations
On the universe's rim,

Fade into utter darkness
Before the besom's blight,
That rises, rises slowly
From the mist enshrouded night.

—EDGAR MACLAREN SWAN.



NELLIE G. SLOCUM, Piano
Director

IMPERIAL COLLEGE OF MUSIC AND DRAMATIC ART

One of the Leading
Schools of the West

MADAM SLOCUM, DIRECTOR

..Faculty..

NELLIE G. SLOCUM, Piano

LULU B. SLOCUM, Vocal

F. C. CULLEN

MANDOLIN AND GUITAR

LOTTIE DARBY

ELOCUTION AND DRAMATIC ART

Address for catalogue

MADAM N. SLOCUM

422 KIMBALL HALL

CHICAGO, ILL.



**EVERY TEACHER
SHOULD BE A TAXIDERMIST**

We can teach you to mount and preserve all kinds of birds, animals, etc. BY MAIL. A fascinating and profitable art. Easily and quickly learned. SPECIAL OFFER TO TEACHERS. Send for particulars to-day THE NORTHWESTERN SCHOOL OF TAXIDERMY 81 Bee Bldg. Omaha, Neb

BABY'S FIRST CLOTHES 24 PATTERNS

to every woman who wants superior, hygienic garments for the baby, insuring health and proper protection. I will send them in a plain envelope for THIRTY CENTS in stamps with my catalogue of garments and accessories for mother and child. I make garments and complete outfit for the little ones at surprisingly low prices. Hundreds sold. Write now.



MRS. F. M. KELLOGG, 71 University Ave., Battle Creek, Mich.

LOOK! INDIAN AXE, 80c; Chisel, 40c; Tomahawk, 35c; Spade, 40c; Hoe, 40c; Knife, 25c; 7 Indian Relics, 35c; 5 different colored Arrowheads, 35c; 10 Sea Curios, 30c; 5 Curios, 1 Old Coin, 1 Relic and New List for 10c.

William P. Arnold, D.A., Peacedale, R. I.

DO YOU WANT FINE MINERALS ?

Brilliant and perfect in color and beauty. New arrivals constantly received from all parts of the world. Choice fire and rainbow tinted Opals at less than usual prices. Hundreds of rare and beautiful things to enrich and adorn your Cabinet. An exceptional opportunity to secure showy specimens at low prices. Teachers, collectors and mineralogists will do well to write to me. ARTHUR N. FULLER, Lawrence, Kansas.

Birds of Song and Story

\$1.00.

FOR NATURE STUDENTS.

Some of the Most Familiar of American
Birds.

“‘Birds of Song and Story’ by Elizabeth and Joseph Grinnell (A. W. Mumford, Chicago), gives to the young lover of nature an introduction to the haunts, habits, notes and color of the common songsters. It gives also traditional stories connected with them, together with bits of sentiment and poetry relating to them. It is written in familiar conversational style, and is scientific without being weighted with heavy technical terms. It has many illustrations and the coloring is remarkably true to nature.”—*Chicago Chronicle*.

A. W. MUMFORD, Publisher,

378 Wabash Avenue,

CHICAGO

IF NOT

WHY NOT

FILL OUT THIS BLANK AND SEND TO US

A. W. MUMFORD, 378 Wabash Ave., CHICAGO

I enclose \$1.50 for which please send me BIRDS AND NATURE one year with the Elm Calendar for 1904.

Begin my subscription with.....and consider me a permanent subscriber until otherwise notified.

Name.....

Street and Number

P. O.....State.....

I am a new, renewal subscriber. Cross out new or renewal as case may be.

Any of our other premiums may be substituted for Elm Calendar

WILD BIRDS IN CITY PARKS

25 CENTS PER COPY

Highly Appreciated by All Classes of Readers.

The appearance of a revised edition of the excellent little handbook entitled "Wild Birds in City Parks," by Herbert Eugene Walter and Alice Hall Walter (Chicago: A. W. Mumford), suggests the need of similar manuals for the identification of birds in other localities. In the present work one hundred land birds only are presented, all of which have been observed in Lincoln Park, Chicago. The use of such a work as this affords an excellent means by which city dwellers may make the acquaintance of many of our wild birds.—*Review of Reviews*.

□ The book is what the title indicates, an inexpensive handbook for the identification of one hundred common birds. Most people are content to know in all a half dozen birds by sight. I have known two teachers on the same day to walk through a park within an hour of each other and each for the express purpose of seeing birds, and one saw a robin, a bluejay, a bluebird and a meadow-lark, and was ready to take oath that she saw every variety of bird there was there. The other saw eighteen birds. The first saw only the birds she knew. With this book in hand the first would soon learn to see the eighteen that the second student found.—*Journal of Education*.

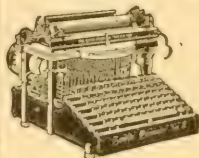
A. W. MUMFORD, Publisher, 378 Wabash Ave., Chicago.

Highest Typewriting Possibilities

Available Only to Users

... OF THE ...

SMITH PREMIER
TYPEWRITER



Known Everywhere. Employed by Governments and Great Corporations which command only the best facilities. :: :: Illustrated Catalogue and "Touch" Typewriting Instruction Book Free

THE SMITH PREMIER TYPEWRITER COMPANY

EXECUTIVE OFFICE, 287 BROADWAY, N. Y.
FACTORY AT SYRACUSE, N. Y.



**BOTH
FOR \$1.75**

Birds and Nature, one year, - \$1 50

Tree Calendar for 1904 - - .75

**BOTH FOR
\$1.75**

It is Not Our Fault

If you have not seen a copy of **AMERICAN EDUCATION.** Send your address—we do the rest. We will also send circulars of Magnificent Combination Offers of our magazine with other leading publications.

Of Course

You can send \$1.00 for one year's subscription without seeing it. Better examine a copy, however. It's our way—it advertises itself.

**New York Education Co.
81 Chapel Street, Albany, N. Y.**

THE AMERICAN BIRD MAGAZINE



Profusely illustrated with Photographs of Wild Birds from life. Fresh, interesting and instructive Bird Literature.

EVERYTHING ORIGINAL

Each number contains **TEN BIRDS IN NATURAL COLORS** for identification. Monthly, \$1.00 a year; single copies, 10 cents.

FREE TO OUR SUBSCRIBERS

Everyone subscribing now to the **AMERICAN BIRD MAGAZINE** is entitled to a **life-size enlargement** of the "**Chippy Family**" in natural colors on paper, 12x20 inches. This is probably the best photograph ever taken of an entire family of live wild birds.

SPECIAL—To all who mention **BIRDS AND NATURE** we will send Vols. I and II, and subscription for 1904, with the "**Chippy Family**," prepaid, for \$2.50.

Address, **AMERICAN ORNITHOLOGY, Worcester, Mass**

A BEAUTIFUL GIFT
BOOK.

A READABLE VOLUME AT
ALL TIMES.

VOL. XIV "BIRDS AND NATURE" IS NOW READY.

It contains forty plates in colors.

Why not order now? Or, better still, order the complete set of fourteen volumes. Examine the pictures in this number of *BIRDS AND NATURE* and then the following prices will surely interest you: Cloth, \$1.50; the fourteen volumes, \$14.00. Double Vol. XIII and XIV, half morocco, \$3 00; the seven double volumes, half morocco, \$14. Return to us the Magazines June to December, together with 75 cents, we will send you this beautiful volume.

A. W. MUMFORD, Publisher,

378 Wabash Avenue, Chicago

"I must say that *BIRDS AND NATURE* makes the study of ornithology, botany and natural history generally a delightful entertainment. One may read it for mere pleasure and gather most useful knowledge at the same time."

GEORGE GEE.

Seattle, Wash., April 27, 1901.

"BIRDS AND NATURE" BOUND VOLUMES

7 Double Volumes, half morocco,	-	-	\$21.00	Special price	-	-	\$14.00
14 Single Volumes, cloth,	-	-	21 00	" "	-	-	14.00

(Either set contains 616 colored plates.)

Enclosed find \$12 00 for twelve bound volumes of *BIRDS AND NATURE*. Please ship at once if possible for the beautiful books are just the thing for our home Christmas tree.

Pasadena, Calif., Dec. 9, 1903.

ADELINE E. WILLSON.

Enclosed find \$14.00 for your six double volumes, half morocco bind, *BIRDS AND NATURE*.

Rochester, N. Y., Dec. 18, 1903.

MRS. EDWARD S. BROWN.

For the \$14.00 enclosed, ship at once your fourteen single volumes *BIRDS AND NATURE*, cloth binding to

Bloomington, Ind., Nov. 26, 1903.

INDIANA UNIVERSITY LIBRARY.

I desire to have your seven double volumes *BIRDS AND NATURE* in the half morocco binding, and enclose \$14.00 for which please ship at once.

Pittsburg, Pa., Dec. 14, 1903.

WM. J. POST.

BOOK NOTICES.

Any volume noticed will be sent prepaid upon receipt of the price affixed, by A. W. Mumford, 378 Wabash Avenue, Chicago, Illinois.

A HERMIT'S WILD FRIENDS. By Mason A. Walton. Dana Estes & Company, Boston. 1903. 12mo, pp. 304+xii. Illustrated. Cloth. Price \$1.50.

A Hermit's Wild Friends is a record of eighteen years in the woods. It is a fascinating volume of animal and woodcraft lore, by the well-known hermit of Bond's Hill, Gloucester, Mass., which gives a graphic account of nearly twenty years of solitary life in the woods. Mr. Walton's cabin near the Old Salem Road is as quaint and interesting as Thoreau's hut at Walden, and has been the object of pilgrimages for some of the most eminent naturalists of America. The author has contributed for years to "Forest and Stream" under the pseudonym of "Hermit," and has also written for the "Youth's Companion" and other periodicals. "A Hermit's Wild Friends" is a very notable addition to recent out-of-door books. It is illustrated in part by the author's photographs of wild creatures which have come under his own observation, and in part by drawings from the pen of Louis Agassiz Fuertes and other eminent artists.

NATURE AND THE CAMERA. By A. Radclyffe Dugmore. Doubleday, Page & Co., New York, 1902. 12mo, pp. 126, cloth. Price, \$1.35.

In the study of Nature the text-book and laboratory research are now largely supplemented by field work. The animal and the plant are studied at close range, and in their natural habitat. There is no better way of permanently recording one's observations than by the use of the camera. Such records are truthful, and, as a rule, much more useful than those made with a pencil only. Attention is also directed to many points that would otherwise pass unnoticed. Realizing the value of the camera in nature study, many persons have asked Mr. Dugmore for information regarding the art of Nature photography. This has led him to prepare this fascinating little book, in which he has set down a full and detailed account of his methods. There could be no better guide to this art, for Mr. Dugmore is a recognized authority on the use of the camera in Nature. "From the choice of a camera to questions of lighting and to the problem of 'snapping' shy birds and animals in their native haunts—every step is explained so simply as to be easily comprehended, even by the beginner." The reading of this book and a study of the seventy-five beautiful half-tones with which it is illustrated, will deepen one's love and respect for animate Nature. We heartily recommend "Nature and the Camera" to our readers.

THE MOTH BOOK. By W. J. Holland. Doubleday, Page & Co., New York, 1903. Royal octavo, pp. 480+xxiv, illustrated, cloth. Price, \$4.00.

This valuable work is beautifully illustrated with forty-eight full page plates, containing 1,500 figures of moths in their natural colors. In addition to the colored figures there are also 300 text cuts. This work is by far the most complete and generous contribution to the subject which has as yet appeared in the English language. The moths of North America are remarkably beautiful, and far exceed in interest, from the standpoint of both form and color, the butterflies, so that this work will prove itself eminently attractive, not merely to those who are interested in entomology, but to all those who love the beautiful in Nature. Such subjects as the methods of collecting specimens, the history of silk-culture and the economic importance of insect-life are fully treated. This book should be in the library of every naturalist and will prove of great value to all who find the study of Nature a pleasant recreation.

NATURE STUDY. By David Worth Dennis. O. W. Ford & Co., Marion, Ind., 1903. 12mo, pp. 170, cloth. Price, \$1.00.

This handy little book consists of 100 lessons about plants. It has been the aim of the author in these pages to put the student in possession of guiding principles—to give him something that will help him interpret what he sees. Nearly all the lessons consider, in one form or another, the plant in question as a species that has won in the struggle for existence and they direct attention to the adaptations that have enabled it to win. The volume is well illustrated and will be helpful to Nature students.

One of the most interesting of the magazine publications is BRDS AND NATURE. Although in appearance not bulky, a fund of information may be found within its covers. There are eight color plates, each in itself a work of art. The portrayal of the subjects is accurate and the coloring exquisite.

There is a short sketch upon each of the subjects illustrated. In each case the sketch is very much to the point and is particularly interesting as covering the field without the use of endless, confusing scientific terms. There are 18 articles and poems, each of commendable length, and all consistent with the title and object of the magazine.

It is not only a delight for the lovers of nature, but its contents are of the kind which would compel even the most casual reader to worship nature's grandness. An article on "The Diamond" is alone worth the price of the magazine.—*Boston Globe*.

Play with the Birds.

The birds we mean are lithographed. They are on fifty-two finely enameled cards in natural colors—enclosed in case, with full directions for playing.

This beautiful "Game of Birds" has just been published, and if there is anything neater, nicer or more novel we haven't seen it.

It is so new—so interesting—you'll certainly like it. Send 2-cent stamp for free sample card.

What better gift can you make your friends, young or old? It entertains the whole household, and so reasonable too—only 35 cents, postpaid.

We will send as **Special Offer**, CHILD GARDEN one year and the game all for \$1.20. Address

A. W. MUMFORD,

378 Michigan Avenue, - CHICAGO

New Bargain List

Send stamp for my list—minerals, shells, fossils, books, curios, etc. Ten thousand dollar stock offered at a sacrifice.

WALTER F. WEBB, 416 GRAND AVE., ROCHESTER, N. Y.

Birds of Lakeside and Prairie

By EDWARD B. CLARK.

16 Colored Plates. Ready Nov. 1. Price, \$1.
Orders received in advance of publication, 75 cents.

THIS book will contain field sketches of bird life in the great middle west. Mr.

Clark for years has been a close student of nature in a section of the country where wild bird observers have been many and bird writers have been few. The author takes his readers afield with him and puts them in close touch with our feathered friends of lakeside, woodland and prairie. The bird byways of Illinois, Indiana, Michigan, Wisconsin, and other great middle western states are thoroughly explored. Mr. Clark is known to the reading public through his many bird articles which have appeared in the Chicago Tribune, and in the different magazines of the country. He is perhaps still more intimately known to middle western readers by the articles from his pen which have appeared several times a week on the editorial page of the Chicago Times-Herald, now the Record-Herald. The colored illustrations in "The Birds of Lakeside and Prairie" will be from our colored plates slightly reduced in size. Mr. Clark's work is characterized by a fine literary style.

A. W. MUMFORD, Publisher.

378 Wabash Ave.

Chicago.

AN AGENCY THAT RECOMMENDS

ELGIN, ILL.—We need in our high school a teacher of Latin and German, salary \$70 to \$80 a month. I am not sure you can help us, as personal application is usually necessary. But if you have a strong candidate you might have her apply.—*Principal E. J. Kelsey, Dec. 23, 1902.*

Telegram—Have remarkably close fit for you. Particulars mailed.—*To Mr. Kelsey, Dec. 24.*
Miss Lewis has accepted the position with us and will arrive to-morrow morning. I think we have secured a desirable teacher, for which our thanks are due you and are heartily given. It is a valuable privilege to be enabled to fill a sudden vacancy promptly with a teacher who would be satisfactory even in the summer, when good candidates are numerous.—*Mr. Kelsey, Jan. 2.*

Three Vacancies Filled to Create One

KENTUCKY MILITARY INSTITUTE.—Major B. L. Jones, whom I obtained through you, has an offer of a position that suits him better, and I have concluded to let him go if I can secure a man in his place. I must have a man who has had experience in teaching chemistry and physics, and can conduct our religious work. Of course I want the usual data.—*Col. O. W. Fowler, Dec. 17, 1902.*

Telegram—Have secured a man whom I consider excellent fit. Particulars mailed.—*To Col. Fowler, Dec. 30.*

Telegram—Send man at once.—*Col. Fowler, Jan. 2.*

Telegram—Col. Fowler telegraphs me to send you immediately. I recommend good man for your place to-day. Answer when you will start.—*To I. J. McGinity, Cattaraugus, N. Y., Jan. 2.*

Telegram—Cattaraugus, assistant, science, mathematics, resigned. Send Decker to apply.—*To Principal J. S. Kingsley, Newark Valley, N. Y., Jan. 2.*

Telegram—Send Mr. Green here at once to see board.—*G. E. Purple, clerk board of education, Newark Valley, N. Y., Jan. 2.*

Telegram—Could not reach Green. Have sent Robenolt for Decker's place. Good man.—*To Mr. Purple, Jan. 5.*

I arrived here last evening, met the board this morning at 8 o'clock, and was elected to the position. Begin work to-morrow morning. Thank you most heartily.—*Wm. M. Robenolt, Jan. 6.*

Allow me to thank you many times for securing a man to take my place. Any service I can render you will be gladly given.—*B. L. Jones, Jan. 6.*

The School Bulletin Agency, C. W. Bardeen, Syracuse, N. Y.

The Fairies That Run the World and How They Do It

A BEAUTIFUL BOOK OF CHILDREN'S
STORIES IN VERSE.

30 Full-Page Illustrations.

By ERNEST VINCENT WRIGHT.

The subjects dealt with are well known to children and many pleasant thoughts regarding the workings of Nature may be derived from the pages of this volume. :: :: :: ::

SPECIAL OFFER

The Fairies That Run the World, \$1.00 } BOTH FOR
Birds and Nature, one year, . \$1.50 } \$1.75

A. W. MUMFORD, Publisher 378 Wabash Avenue
CHICAGO

Gems and Gem Minerals

By Oliver Cummings Farrington, Ph.D.

This valuable work is now in press.

It tells what gems are made of, where they come from, how to determine them, how to distinguish spurious gems, etc.

It thus furnishes information of the greatest value, not only to purchasers of gems, but to those who desire to search for them in nature.

Perhaps there is a valuable deposit of gem minerals in your own locality which no one has yet discovered. This book will help you to find it.

Sixteen accurately colored plates and numerous text illustrations show the appearance of the gems in their natural state, as well as cut stones. No authoritative work on this subject, with colored plates, was ever offered at so low a price before, and it would be impossible to do it now but for the publisher's superior facilities.

240 pages. 16 colored plates. 40 text
illustrations . . . \$2.50

A. W. Mumford, Publisher

378 Wabash Ave., Chicago

The Greatest Offer Yet.

Offer I.

For Fifty Cents, stamps or money order, we will send you **The World's Review**, a 16 page weekly current topic paper for teachers, one year, **How to Teach Drawing**, **Our New Examination Book** **How to Pass an Examination**, **Song Favorites** and **Busy Sent Work** (the 5 full sets). The total value of the above is \$2.35, and they cannot be obtained for any less, except in this offer. ~~We~~ We are giving you the books free to introduce them.

Offer II.

For 75 Cents we will send you all **Offer number one** and also a year's subscription to **Normal Instructor & Teachers' World**.

Offer III.

For \$1.10 we will send you all of **Offer number one** and either **The Educator**, **The Young Idea** or **Primary Education** for one year. ~~total value~~ total value, \$3.35.

If you are already a subscriber to one or more of the papers or magazines you can have your subscription begin when the time for which you have paid has expired.

In case of the books, 3 cents additional must be sent for each book ordered, **Busy Work** 6 cents, to cover expense of wrapping, postage, etc. Address

THE WORLD'S REVIEW,
102 Seneca St., - Buffalo, N. Y.

EXCHANGE YOUR MAGAZINES FOR BOUND VOLUMES

If you have the unbound copies of **BIRDS AND NATURE** for 1902, return them to us prepaid with \$1.50 and we will send you the corresponding double volume XIII and XIV in half morocco. Or, if you return the last five numbers of **BIRDS AND NATURE**, we will send you the corresponding Volume XIV in cloth for \$0.75.

A. W. MUMFORD, Publisher

378 Wabash Ave.

CHICAGO



Tree Calendar For 1904

9 x 12 inches.

This beautiful calendar contains twelve gray black mounts, on each appearing a forest tree picture in photogravure (size of calendar 9x12 inches, photogravure 5 1-2 x 7 inches) as follows:—Bitternut Hickory, Black Ash, White Pine, Butternut, Osier Willow, Horse Chestnut, American White Birch, Sugar Maple, American Elm, Black Oak, Tamarack, Locust.

PRICE, 75 CENTS

A. W. MUMFORD, Publisher, - - - 378 Wabash Avenue. Chicago.

TO THE READER OF THIS MAGAZINE

Fourteen volumes of BIRDS AND NATURE were completed with the Dec., 1903, number. These volumes contain illustrations of Birds, Birds' Eggs, Birds' Nests, Flowers, Mushrooms, Mammals, Fish, Insects, Fruits, Shells, Minerals and Gems; and the text contains several valuable articles from the pens of well-known writers and educators. We shall continue to have BIRDS made the chief attraction, and at least four bird-plates will appear in each number. Among the probable color illustrations of future numbers, the following may be mentioned:

FEBRUARY, 1904.

House Finch.
American Goshawk.
Lesser Scaup Duck.
Nest of the Lesser Scaup Duck.
Grape Fruit.
Mushroom.
Kittiwake.
Cut-throat Trout

MARCH, 1904.

Canadian Warbler
California Towhee
Black Vulture
Yellow Rail
Nest of the Cedar Waxwing
Grasshoppers
Kumquat
Mushroom

APRIL, 1904.

Swainson's Warbler
Cassowary
Golden-crowned Sparrow
Yellow Legs
Nest of the Red-eyed Vireo
Dragonflies
Limes
Mushroom

The preparation of the birds and other animals for photographing in colors will be under the direction of Mr. Frank M. Woodruff, of The Chicago Academy of Sciences. Mr. Woodruff will also assist the Editor in the selection of subjects.

During the publication of the fourteen volumes of BIRDS AND NATURE the following 616 colored plates have appeared:

- | | | |
|--------------------------------|--|---|
| 361 Birds. | 7 Minerals and Ores (48 varieties). | 5 Mushrooms. |
| 70 Mammals. | 17 Gems and Gem Minerals. | 4 Corals. |
| 40 Flowers. | 9 Shells (96 species). | 3 Birds' Eggs (49 Species). |
| 28 Medicinal Plants. | 8 Fishes. | 2 Starfish and Sea Urchins. |
| 18 Fruits & Nuts (28 species). | 5 Reptiles (Turtles and Lizards, 6 species). | 1 Polished Wood Sections (6 varieties). |
| 16 Insects (86 varieties). | 10 Birds' Nests. | 1 Showing Change of Color in Birds' Feathers. |
| 11 Landscapes. | | |

A. W. MUMFORD, Publisher, 378 Wabash Avenue, Chicago.

"A beautiful book of rare merit."

Among Green Trees

By JULIA ELLEN ROGERS.

200 Illustrations, Photogravures and Half-tones, \$3.00

A Guide to Pleasant and Profitable Acquaintance with Familiar Trees.

THE VOLUME IS DIVIDED INTO FOUR PARTS:

Part I. Outdoor studies with trees. The nature-study side.

Part II. The life of trees. The physiological side.

Part III. The cultivation of trees. The practical side.

Part IV. The kinds of trees. The systematic side.

One of the handsomest of the nature books of the fall season—a volume attractive enough in every way to be also considered a holiday gift book—is "Among Green Trees," by Julia Ellen Rogers. It is, as the subtitle sets forth: "A Guide to Pleasant, Profitable Acquaintance with Familiar Trees." The dedication is interesting and is:

To my father and mother, Daniel Farrand Rogers and Ruth Llewellyn Rogers, pioneers of the treeless prairie, who planted seed and sapling, who toiled and hoped and waited to make for their children a home among green trees.

The contents are both entertaining and valuable for their facts. But quite as interesting as the text are the illustrations. These consist of full-page photogravures of entire trees, half-tones of the trunks, and text drawings in line. The trees are in full foliage, the individuals selected are leaders of their kind, and the photographer knew an artistic composition when he saw it. The result is that many of the photogravures are satisfactory from the artistic standpoint.—*The Chicago Inter Ocean*.

It is doubtful if one can find a handsomer book than "Among Green Trees," written by Julia Ellen Rogers of Ithaca, N. Y., and published by A. W. Mumford of Chicago. This book, in green and gold, contains twenty-five full-page photogravures of trees, with many smaller halftones illustrative of bark, leaf and seed. The trees chosen are typical ones, the selections being in each instance of a well-nigh perfect plant.

Miss Rogers takes her readers into the woods in March, when the red maple begins to glow, and teaches one by one the life histories of the forest giants. There is nothing which has to do with the tree, from the topmost leaf to the last and tiniest rootlet in the dark ground, of which the author does not tell. The beautiful illustrations are of the greatest assistance in the understanding of the nature laws of which the writer tells. There is much beside mere description of tree life in this book of trees. Full and complete instructions for the cultivation of trees of all kinds are given. The enemies of the trees, fungus growth and insects, are considered at length, and the best means of combating them are explained to him who would undertake tree culture.

If the westerner who has never been East wishes to know why it is that the New Englander, transplanted to the prairies, sometimes expresses a yearning desire "to see a tree," let him look at the frontispiece of

"Among Green Trees." It shows an avenue of elms in the village of Deerfield, Mass. The trees are magnificent; no other word expresses it. This New England byway is perhaps more famous for its elms than is any other eastern village street except that famous one along whose leafy way lived Thoreau, Emerson and the Alcotts. "Among Green Trees" is a book not only for the arboriculturists and the nature lover, but for whoever appreciates that which is well done in literature and in picture making.—*The Chicago Tribune*.

The book contains twenty-five splendid full-page illustrations of trees, and almost every page bears an excellent half-tone or line engraving. The illustrations are exceptional in quality, and much of the value of the volume lies in their excellence.

The writing is natural, pleasant and displays intimate knowledge of the subjects. An index in the back of the book will be found very useful, as well as the systematized parts indexed in the first pages.

The volume is neatly bound in a dark green cloth, of a dignified size, printed on good smooth paper, well arranged, and typographically all that could be desired.—*The Chicago Evening Journal*.

Julia Ellen Rogers, of Ithaca, N. Y., has written a book called "Among Green Trees." It is in both external and internal appearance one of the handsomest nature books that have been put forth in many seasons. Miss Rogers calls her work in a subtitle "A guide to pleasant and profitable acquaintance with familiar trees." What she has written is just that which she has put it down to be.

The illustrations in "Among Green Trees" are photogravures of a score or more of our forest friends and half-tones of trunks and leaves. There are in addition a large number of line engravings from drawings made under the direct supervision of Miss Rogers. The trees which are pictured are the finest specimens of their kind, the subjects having been chosen with care. Among the subjects are the black oak, the white pine, the American elm, the tamarack, the red maple, the locust, the ash, the fir and many others. Nature is so evident in these tree reproductions that the leaves fairly seem to whisper to us from the pages of the book.

"Among Green Trees" will be of interest not only to the arboriculturist but to every lover of nature. In description Miss Rogers excels. The fragrance of the forest is in what she writes.—*The Chicago Record-Herald*

SPECIAL OFFER! BIRDS AND NATURE, one year, \$2.00, AMONG GREEN TREES, \$3.00; both for.... **\$3.00**

A. W. Mumford, Publisher.

378 Wabash Ave.

CHICAGO.



NOTABLE NEW BOOKS



BIRDS OF LAKESIDE AND PRAIRIE. By Edward B. Clark. With 16 illustrations in color. Price, \$1.00.

This book contains sketches of bird-life in the great middle west by one of the country's closest students of nature. The author takes his readers afield with him and puts them in close touch with the birds of lakeside, woodland and prairie.

"Mr. Clark has found an astonishing variety of birds and is a mighty hunter—with the opera glass."—*Chicago Inter-Ocean*.

THE JINGLE BOOK OF BIRDS. By Edward B. Clark. 16 Colored plates. Price, 60 cents.

This book is both for the children and the elders. The lines are not jingles merely, but jingles which have a well-rounded purpose and much of pith and point. The color scheme of the cover is strikingly beautiful.

"The 'Jingle Book of Birds' is a very pretty possession."—*Chicago Evening Journal*.

A B C BOOK OF BIRDS. For children large or small. By Mary Catherine Judd.

With nonsense rhymes for little ones and prosy sense for older ones. 26 Colored plates. Price, \$1.00. Miss Judd in this has prepared a book that will be a delight to every child and will be intensely interesting to every adult lover of birds.

"No better child's book can be found."—*Chicago Record-Herald*.

BIRDS OF SONG AND STORY. By Elizabeth and Joseph Grinnell. 16 colored plates. Price, \$1.00.

These authors are well known as lovers of birds and as interesting writers on bird life. They not only have made the feathered kingdom a subject of out-door study for many years, but they have been explorers in the great field of general literature for the purpose of finding all that it holds pertaining to our bird friends.

"The book, from beginning to end, can be read with pleasure and profit by old and young alike. It is a fascinating piece of natural history."—*Pasadena Daily News*.

AMONG GREEN TREES. By Julia Ellen Rogers. 24 photogravures, 50 half-tones and over 100 drawings. Price, \$3.00.

This is one of the most practical books ever published. It is complete in itself, containing no technical terms that are not defined. It will not have to be used with some other publication to make the text intelligible. The members of Forestry Clubs and all interested in trees will find it a handy companion at all times. Miss Rogers' experience in the teaching of Nature Study well prepared her for the work of writing this book.

"Among Green Trees" is a book not only for the arboriculturists and the nature lover, but for whoever appreciates that which is well done in literature and picture making.—*The Chicago Tribune*.

THE FAIRIES THAT RUN THE WORLD AND HOW THEY DO IT. By Ernest Vincent Wright. 30 Illustrations. Price, \$1.00.

A beautiful book of children's stories in verse. The subject of fairies as a basis for children's stories is by no means a new one. Usually, however, human beings, such as Kings, Princesses, or Children are made the leading characters, with fairies as occasional participants in the unfolding of the fable's wonders. In this new book the elves are given exclusive prominence. The subjects dealt with are well known to children, and many pleasant thoughts regarding the workings of Nature may be derived from the pages of this volume.

GEMS AND GEM MINING. By Dr. Oliver Cumming Farrington. Octavo. Price, \$2.50.

All persons delight to possess gems and yet how few are familiar with their characteristics, their origin, the mode of obtaining them from nature and their fascinating mythology. At present there is no authoritative work within the means of the majority of people. A handy volume on this subject is desired. We have supplied such a book. It is beautifully illustrated with pictures in color, photographed from the gems themselves and supplemented by half-tones made from rare photographs. The text is written in a style interesting to both the connoisseur and the amateur.

A BOOK ON SHELLS. By Frank Collins Baker. Octavo. Price, \$2.50.

What is the life history of a snail? What is the life history of a clam? Read about these interesting creatures. Well illustrated by color photography and descriptive figures in black and white, and with a text written in popular though scientifically accurate manner, this volume is unique among books. It will prove of value as supplemental reading in nature study.

CONSTRUCTION WORK. Its relation to number, literature, history and nature work.

By Edward F. Worst, Prin. Ohio Street School, Austin, Ill. 125 illus. 108 pages, 5½x8¼ in. 75 cents.

This little volume contains one hundred and twenty models for construction work in bristol board, manila paper and mimeograph paper, with definite, dictated steps for making each one. They are planned originally for work in the primary grades. Among the articles made we find baskets and boxes of various kinds, furniture, trays, postage stamp holders, thread winder, pencil holder, comb case, cradle, candle stick, Puritan hat, Eskimo's sled, bill holder, card receiver, wind mill, King Alfred's lantern, etc., etc. Many of the forms are familiar to kindergarten teachers through their work in card-board modeling. Primary teachers will doubtless find it very useful. The exercises given in the book afford one means of manual training developing accuracy, familiarity with terms, opportunity for measurement, etc.]

BIRDS AND NATURE. Vol. XIV. Edited by William Kerr Higley. Octavo, pp. 232, 40 full-page illustrations by color photography. Price, cloth, \$1.50.

BIRDS AND NATURE. Double Volume, XIII, XIV. One-half morocco. \$3.00. Set 12 Single Volumes, cloth, \$12.00. Set 6 Double Volumes, half morocco, \$12.00.

WILD BIRDS IN CITY PARKS. By Herbert Eugene Walter. 25c.

A. W. MUMFORD, Publisher

378 Wabash Ave., Chicago

SMITHSONIAN INSTITUTION LIBRARIES



3 9088 00984 3608